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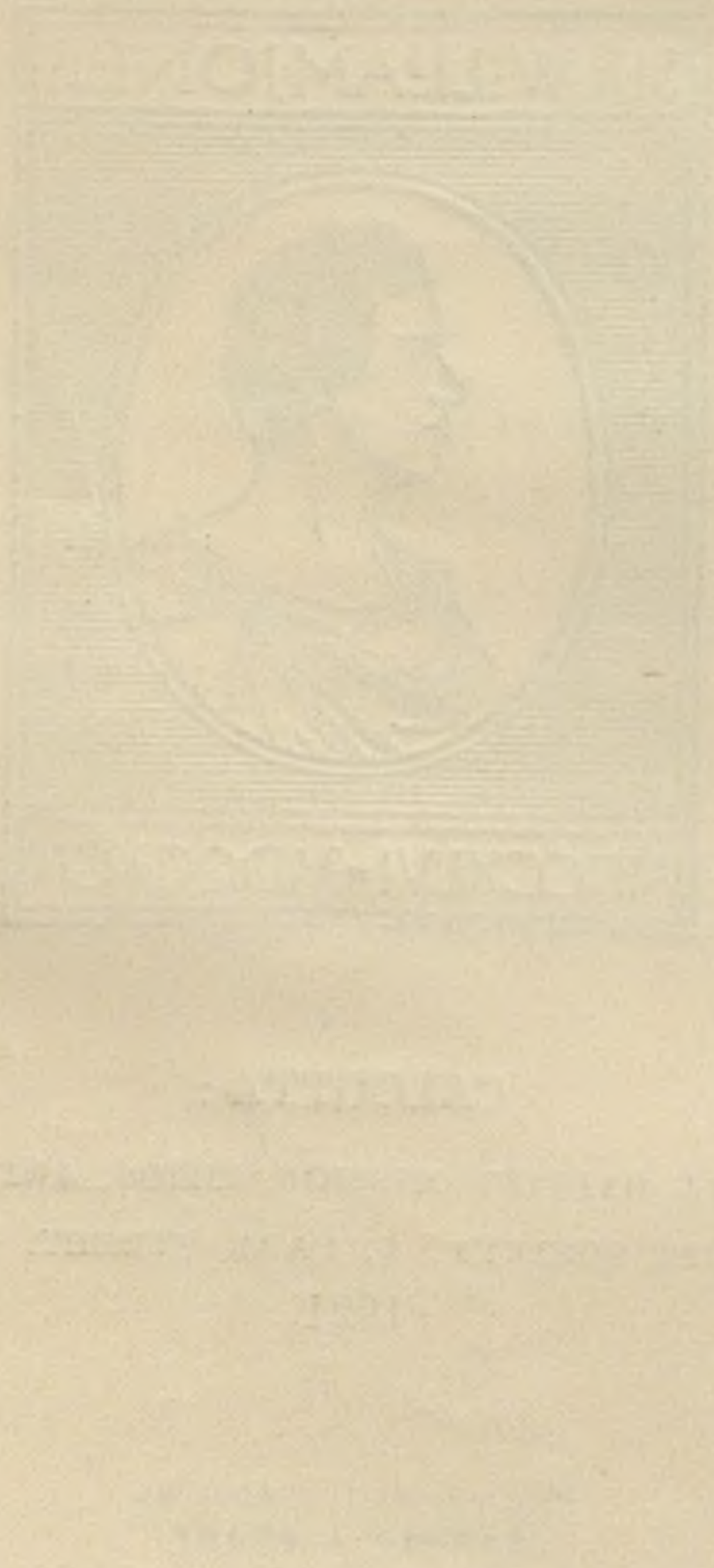

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1. The Utility of Desiccants in Electrostatic Measurements.

By V. H. Jackson, M.A., and A. T. Mukerjee, M.A.

Preliminary tests on the relative efficiency of Calcium chloride and strong Sulphuric acid in protecting from the influence of moisture in the surrounding air the insulators used in physical apparatus for accurate Electrostatic measurements were described in a paper published by us in 1914.[1] These tests were however open to the objection that the sealing of the case within which the insulators of the electrometer and other apparatus used for the measurements were enclosed was not hermetical. In the following series the measurements have been made with an improved form of apparatus,[2] in which the Dolezalek electrometer and the insulators were enclosed in a case from which the moist external air is absolutely excluded, so that the comparisons between the various desiccants used were carried out under strictly uniform conditions. As before, we consider that the maximum rate of leak which is permissible with a satisfactory degree of insulation of the quadrants is 0·01 volt per minute, when the quadrants are initially charged to about one volt.

I. Calcium Chloride.

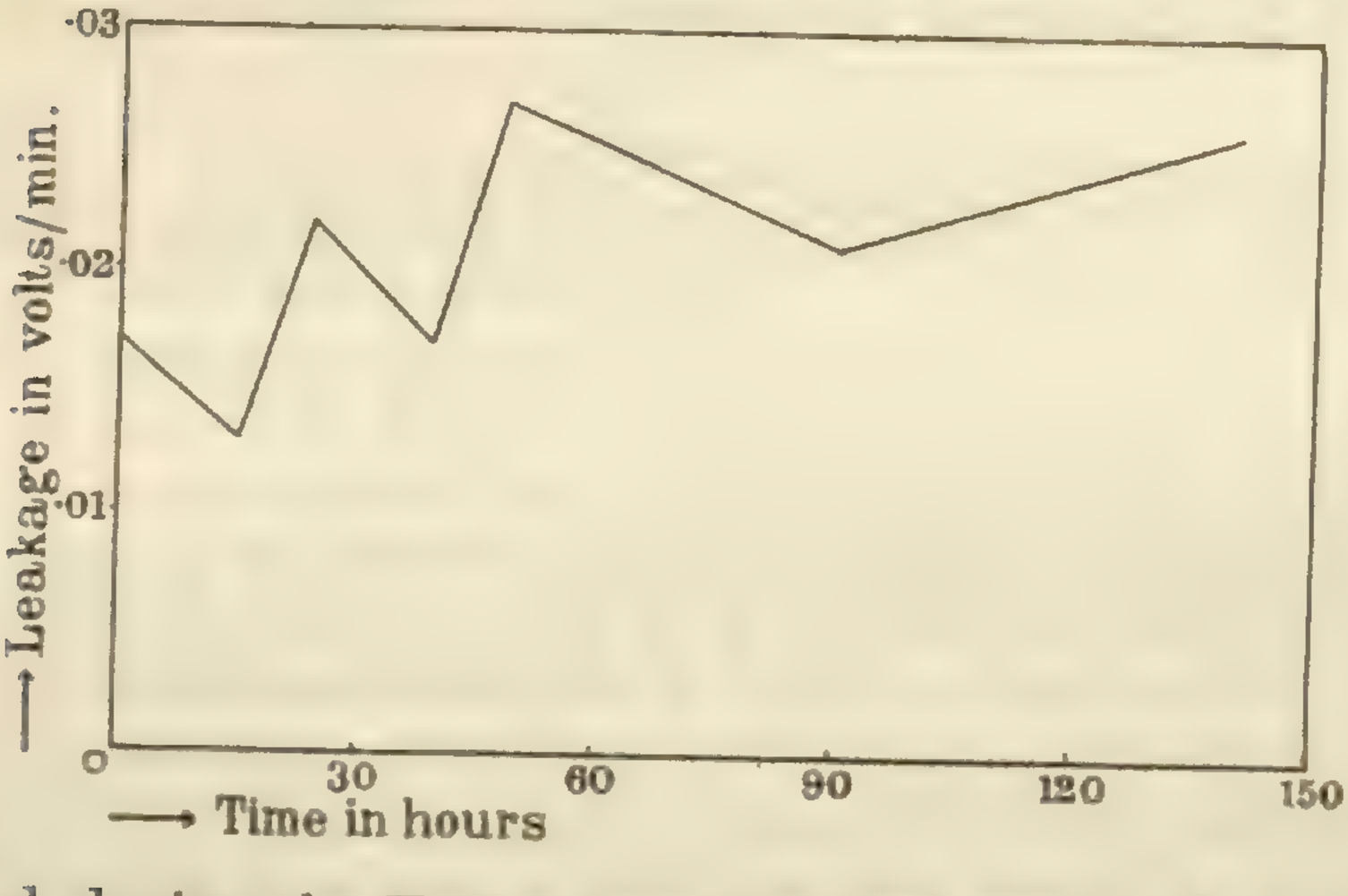
A solid and easily procurable desiccant being desirable, Calcium chloride was again the first substance examined but, in confirmation of the earlier results, proved quite unsatisfac-

[1] Journal and Proceedings A.S.B., Vol. X, 1914, pages 227-240.
[2] This Journal Vol. XVI, page 15.

tory. The Calcium chloride, obtained from Merck in granular form was spread on three dishes and introduced quickly in the case which was then sealed up. It will be noticed (Diagram I and Table I, Column III) that the rate of leak on the average was more than double the maximum value. After about 140 hours, on opening the case, it was found that the Calcium chloride had hardly changed in appearance, though on keeping it exposed to the moist air it changed rapidly and absorbed a large amount of moisture. That this substance is inefficient as a desiccant for electrostatic work has already been noticed in Glazebrook's Report [1] of 1891 on the Muirhead standard air-condenser (capacity about 0·02 M.F.) as the following passage will show :—"The amount of leakage was very different .... and depended on the dryness of the air and ebonite pillars. Thus on March 11, when strong acid had been enclosed for some time, the leak per minute amounted to ·1 per cent. of the whole charge. The sulphuric acid was

DIAGRAM I.

Calcium chloride (12.11.14—18.11.14).



removed during the Easter vacation and replaced by Calcium chloride, and after this the leak rose to about 1 per cent. per minute or ten times its former value. With the Calcium chloride inside the leak was never reduced to ·8 per cent. per minute."

It seems worthwhile to draw special attention to the unsatisfactory behaviour of Calcium chloride, as this substance still seems to be occasionally employed under the impression that it improves electrical insulation.[2]

II. METALLIC SODIUM.

Metallic sodium is extensively used as a desiccant in

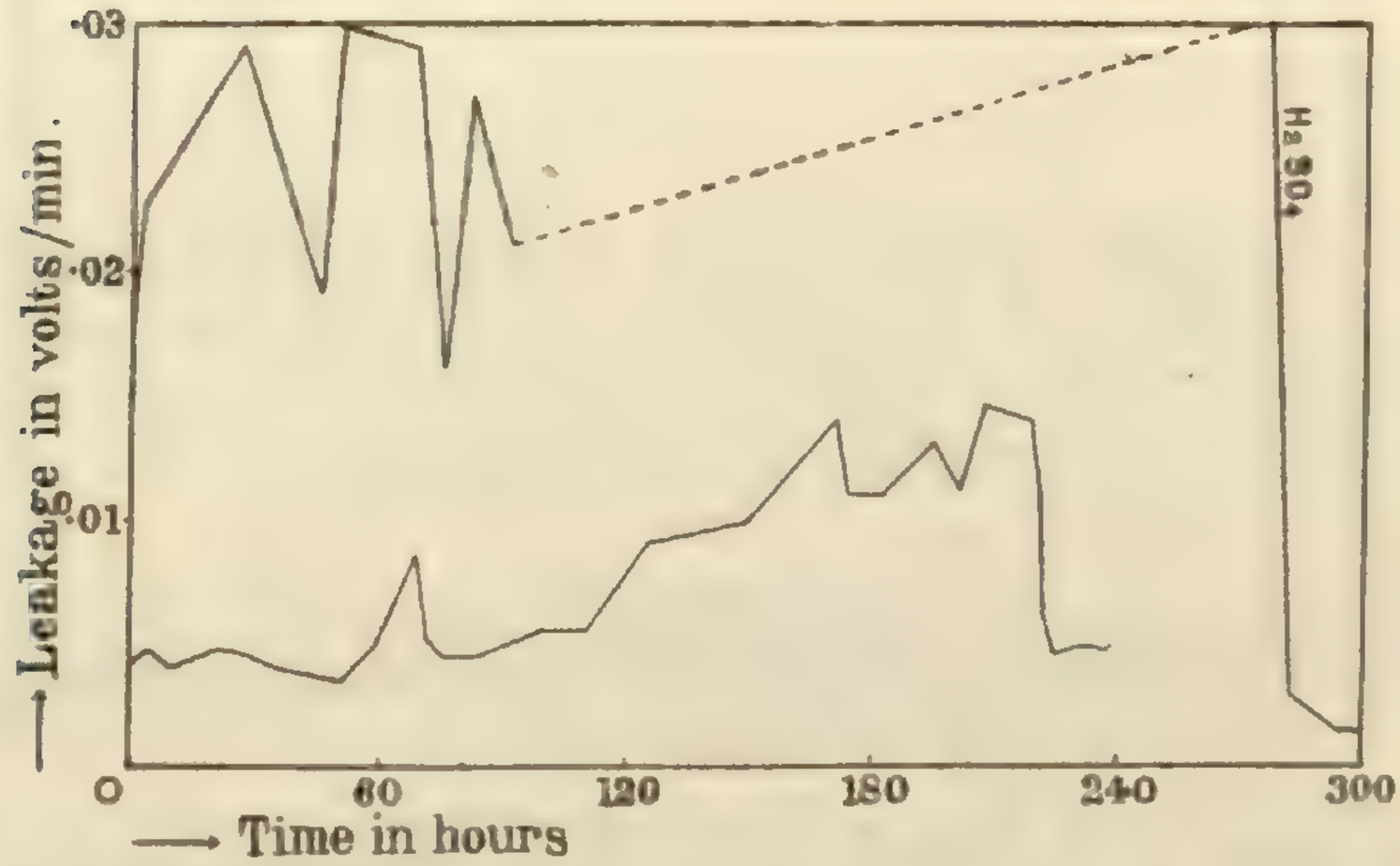
[1] B.A. Reports on Electrical standards, page 376.
[2] For instance, Richardson, Proc. Roy. Soc., Vol. XCII, page 42.

electrostatic work, especially in Germany, as for instance by Gerdien,[1] Ebert,[2] Hochheim,[3] Elster and Geitel,[4] Daunderer,[5] and it is the only means provided for drying the air in the most modern quartz fibre electrometers such as the Wulf[6] and the Lutz[7] patterns, as well as in the insulators, specially designed for high insulation, such as those of Gockel[8] and others. Nevertheless, we have not been able to trace any published measurement which justifies the supposed efficiency of sodium as a desiccant for accurate electrostatic work; and our own observations, which have been carefully verified in several ways, lead us to the unexpected conclusion that for this purpose metallic sodium is either ineffective or even worse than useless.

In our preliminary measurements we used this substance

DIAGRAM II.

Top—Sodium bits (17.10.14—29.10.14).
Bottom—Effect of glass stirrer, details in Table II.



cut in small pieces and spread on several dishes, which were introduced quickly into the electrometer case. It was naturally impossible to prevent a certain amount of deterioration of the surface before the case was sealed. In these tests, the leak never fell below 0·015 volt per minute, and usually varied between two and three times the maximum permissible value. Diagram II and Table I, Column IV, giving the values obtained, show that even after 300 hours no improvement was produced. On the first occasion when this surprising result

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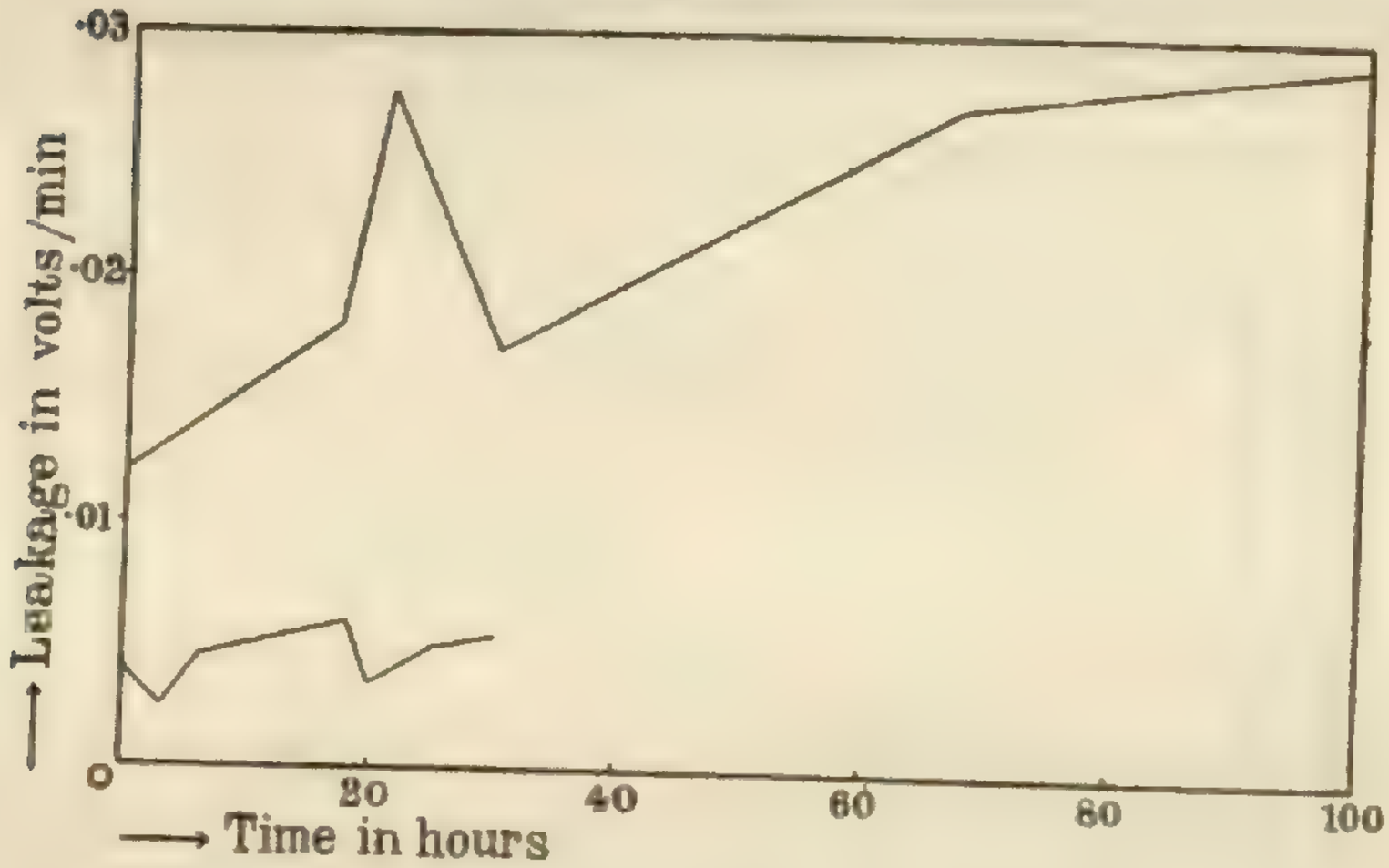
1 Phys. Zeit. Vol. 5, 1904, page 295.
2 ,, ,, XI, page 392.
3 ,, ,, X, page 51.
4 ,, ,, VIII, page 275.
5 ,, ,, VIII, page 282.
6 ,, ,, VIII, page 246 and Vol. X, page 251.
7 ,, ,, IX, page 100.
8 ,, ,, VI, page 328.

was noticed it was thought that the insulation of the quadrants had been temporarily spoilt by a spider thread or some other conducting fibre. To test this point the case was opened, and without disturbing any fittings the sodium driers were replaced by strong sulphuric acid. This immediately reduced the leak to the usual very low and constant value obtainable with sulphuric acid, as shown on the last portion of Diagram II (top curve).

Hardly any improvement even for the first few hours was obtained by using freshly drawn sodium wire. The sodium press was brought very near the electrometer case, and fairly long lengths of wire 0·5 mm. in diameter were quickly drawn into dry beakers, which were then immediately introduced

DIAGRAM III.

Top—Sodium wire (18.11.14—23.11.14).
Bottom—Quicklime.



into the case and sealed up. This operation was done so quickly that the brightness of the surface was scarcely affected. The results are shown in Diagram III, and Table I, Column V, from which it may be seen that the leak never fell as low as the standard maximum value.

The cause of this anomalous behaviour of metallic sodium is still obscure. It may be pointed out, however, that the action of sodium on the amount of moisture present in the volume of air treated must be accompanied by chemical change. Whether sodium is slightly radio-active or not, a certain amount of increased ionisation may result from the process.

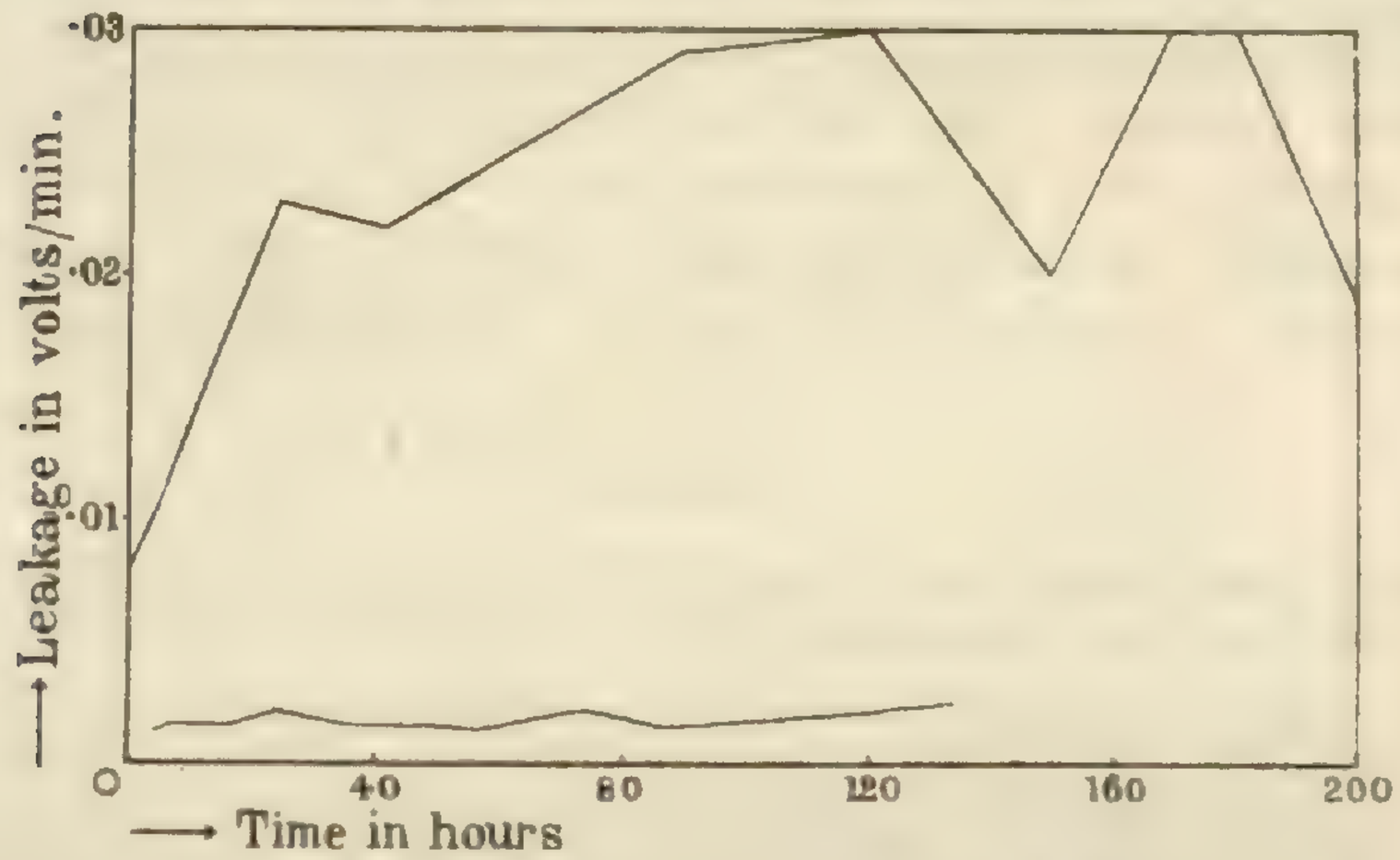
III. PHOSPHORUS PENTOXIDE.

Phosphorus Pentoxide is so rapidly affected by any moisture present in the air that it has probably not occurred to any physicist to use it in order to improve electrostatic insula-

tion. We have found no record of its use for the purpose, but as our arrangement admits of hermetical sealing we desired to test its efficiency on the limited volume of moist air thus concerned. In the preliminary measurements the substance

DIAGRAM IV.

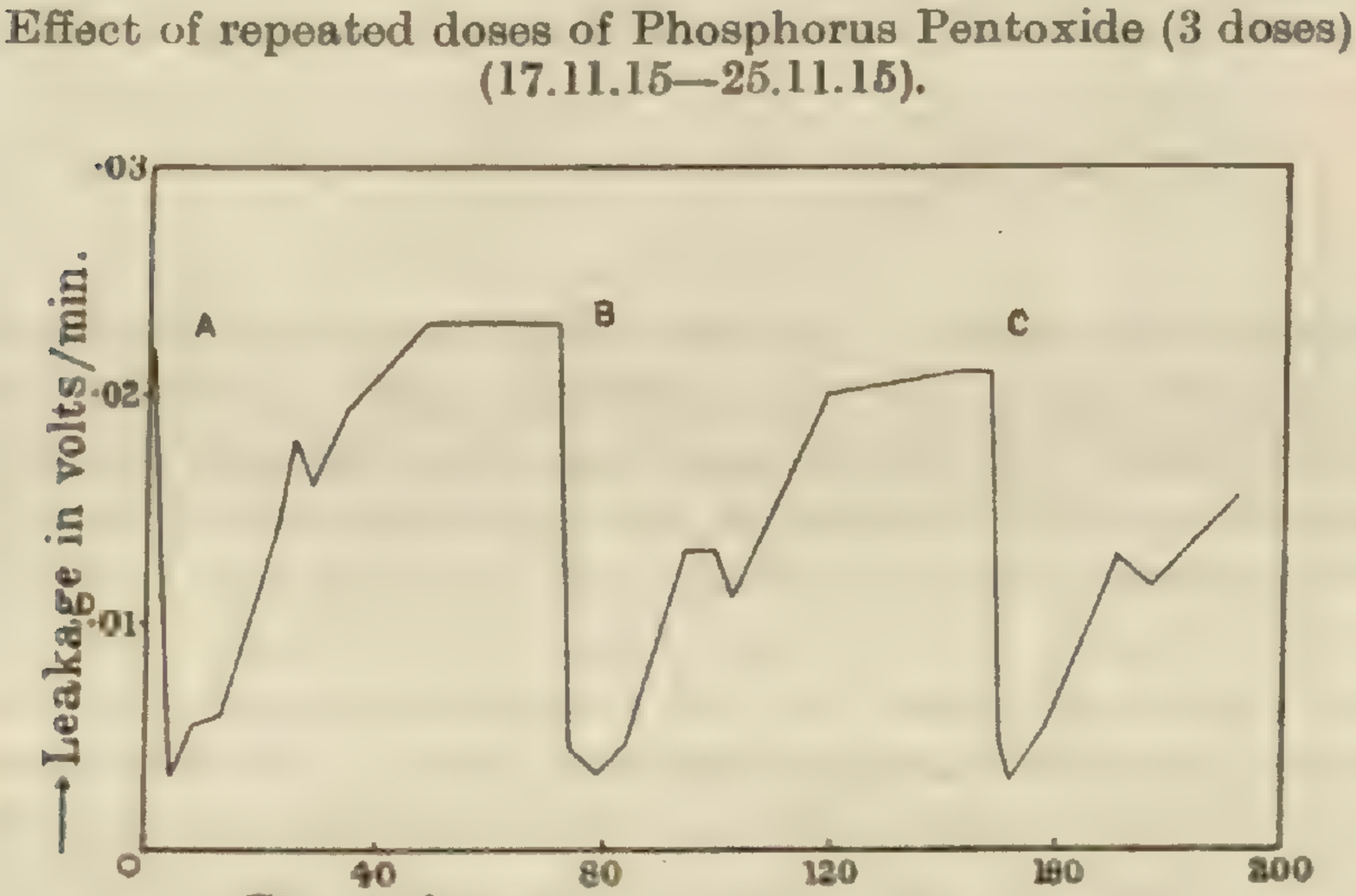
Top—Phosphorus Pentoxide on dishes (23.11.14—2.12.14).
Bottom—Strong Sulphuric acid, the best desiccant.



was, as with sodium, spread out on several dishes and quickly introduced into the case. Diagram IV and Table I, Column VI, show that the leak of the quadrants, which was initially a little below the permissible value, began steadily increasing on

DIAGRAM V.

Effect of repeated doses of Phosphorus Pentoxide (3 doses) (17.11.15—25.11.15).

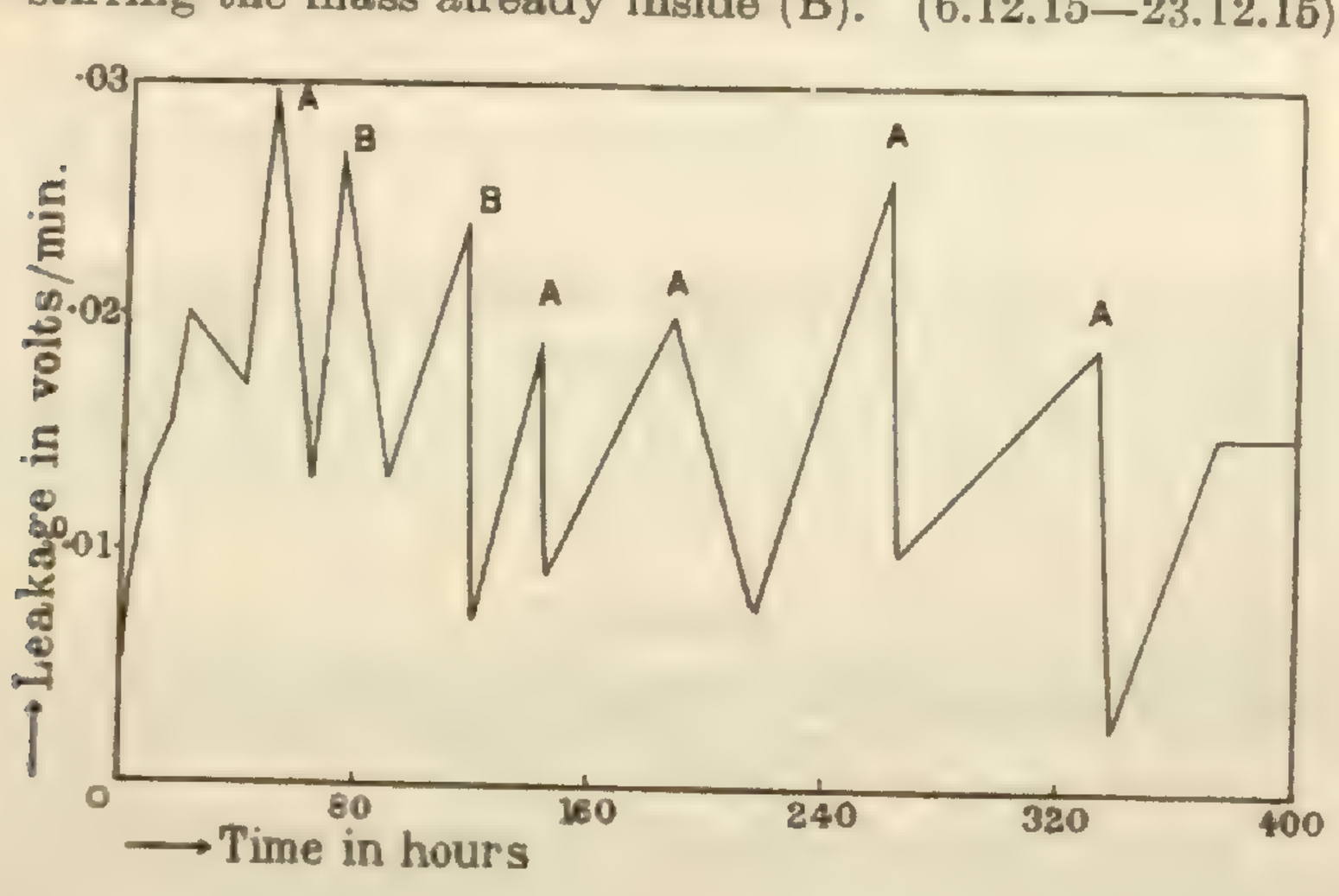


sealing up the case, and reached double the maximum value in 20 hours. No improvement was noticed even after 200 hours, as the leak remained between twice and three times the standard permissible value. It might naturally be thought that

the value of this powerfully hygroscopic substance as a desiccant was destroyed during the time taken in spreading it on the dishes and introducing it inside the case. To avoid this objection, and also to test the effect of repeated doses of the desiccant, the following arrangement was made :—A piece of steel tubing of about half an inch bore was pressed down into the large bottle containing anhydrous phosphorus pentoxide, and then quickly introduced into the electrometer case through the opening on its top. By means of a steel rod the phosphorus pentoxide was pushed out of the tube into a wide dish supported in the interior of the case which was then immediately and hermetically sealed by replacing the cover in the groove round the opening. In this way the substance hardly came into contact with the external air at all. This method gave results

DIAGRAM VI.

Effect of introducing fresh charge of Phosphorus Pentoxide (A) or of stirring the mass already inside (B). (6.12.15—23.12.15).



of considerable interest, which are shown in Diagram V and Column VII of Table I. Immediately after its introduction a certain amount of desiccation was manifest, as the leak fell slightly below half the maximum permissible value. It then, however, immediately commenced to increase, and before becoming after 50 hours approximately constant, reached over double the standard value. A second charge of the desiccant produced almost exactly similar effects, which were again reproduced by a third charge. The results of a further trial with this substance extending over a period of 400 hours are given in Diagram VI. They show that the effect of stirring the quantity already introduced in the case, so as to expose fresh surfaces to the air, resembled that of adding fresh charges in temporarily reducing the leak. On opening the case at the end of the last set of measurements it was observed that there

was only a slight change on the surface of the phosphorus pentoxide.

It seems clear that moisture could not have been the cause of the increase of leak which was invariably observed. As in the case of metallic sodium, any drying action due to this substance is accompanied by chemical change, which may similarly be accompanied by increased ionisation. It is also possible that the abnormal increase of leak in this case is due to the presence of yellow phosphorus in the sample of phosphorus pentoxide which was used. The chemical action of moisture on yellow phosphorus was found by Schenck [1] to produce an increase of ionisation.

IV. Quicklime.

Solid desiccants are obviously so much more convenient for use with many electrostatic instruments than strong sulphuric acid that it was considered worthwhile to investigate the matter further. Professors Caldwell of Patna College and Bellars of Rangoon College have suggested to us that other solid desiccants with which there are less chances of complications due to chemical action might be more suitable for our purpose. One of these is Quicklime, and we have examined the action of a sample of this substance kindly prepared for us at temperature about 600° C by Professor Bellars. The general conclusion is that though quicklime does not resemble metallic sodium and phosphorus pentoxide in producing an abnormal increase of leak after a short time, the improvement in insulation caused by it is only temporary. This is probably due to the great difficulty in keeping this substance absolutely anhydrous, but it also appears as if its efficiency as a drying agent is entirely confined to the surface layer, which is rapidly affected by any moisture present. Diagram III shows that when the quicklime was first introduced into the case it brought down the leak to 0·0025 volt per minute, but the effect did not last long, and after 30 hours reached the value 0·006, which is the usual leak during the dry season when desiccants are not used. A larger amount of the substance tested subsequently did not bring down the leak at all, although the tin containing the quicklime was after opening again sealed by paraffin and kept in a sulphuric acid desiccator.

Further tests on this substance, freshly prepared, and on others such as anhydrous Copper sulphate and sodium ethoxide carried out during the dampest season of the year would be interesting, but it seems likely that the surface layers of all of them will prove to deteriorate so rapidly on exposure that for all ordinary purposes they cannot compete with strong sulphuric acid.

[1] Science Abstracts, Vol. XVIII, 1915, No. 1581.

V. Sulphuric Acid.

Sulphuric acid of density about its maximum, 1·840, corresponding to 90% of pure H_2SO_4 prepared by boiling with the usual precautions, is the only desiccant which we have found suitable for use with sensitive quadrant electrometers and similar instruments, and even with this substance the best results can only be obtained when, as in our arrangements, the insulators which are to be kept dry by it are enclosed in a hermetically sealed case. As soon as we had succeeded in making the sealing of the older type of case used by us hermetical, we introduced or removed the sulphuric acid without opening the case itself. To do this, we employed a glass siphon passing through a sealed opening in the bottom of the case and dipping into the beaker. By means of a two-way tap outside, the acid could be introduced under pressure or siphoned off. The acid contained in the beaker could be stirred by means of an open spiral, of glass tubing, which could be either lowered entirely underneath the surface of the acid, or pulled completely out of it, by a thread working air-tight through a U tube filled with mercury and oil and sealed into the case. As noticed with all the solid desiccants which have been examined, the action of the surface layer of this substance is weakened by the absorption of moisture, and in order to obtain the full improvement possible it is necessary to renew the surface by stirring the acid. By this means the period of useful action of the sulphuric acid in a sealed case can be prolonged almost indefinitely.

A curious and unexpected effect which was invariably noticed, however, was that if the glass stirrer was left hanging in the air after being pulled out of the acid the leak of the electrometer immediately began to increase, reaching values about fifty to seventy per cent. in excess of the normal value. The original low value (about 0·004, as the acid used was only of 90 per cent. strength) was immediately restored by stirring again and leaving the stirrer entirely underneath the surface of the acid. The cause of this behaviour is obscure. It is probably due to adsorption of water on the glass, the acid dropping off the stirrer being more concentrated than the original. Diagram II and Table II show clearly this effect in a long set of measurements which was performed in order to confirm the conclusions arrived at in previous work. The first part, up to 60 hours, shows the normal leak with the glass stirrer completely immersed in the acid; the stirrer was then pulled out and left partly exposed, and the leak began to increase. Stirring brought this down to the usual value. Again after 110 hours, the stirrer was left exposed for a long period to see the maximum increase of leak possible. The leak increased to double the usual value and then began vary-

ing between the limits 0·010 and 0·015 volt per minute. Finally, after 220 hours, the acid was again stirred and the stirrer left underneath the surface. The leak of the quadrants regained the usual value and remained as satisfactory as before.

Though these arrangements for introducing the acid without opening the case, and for stirring the acid, worked quite satisfactorily, they are too complicated for ordinary use. By means of the simple arrangement described in detail in a previous paper,[1] the acid can be so easily drawn off and replaced by a fresh quantity that it is unnecessary to provide any special arrangements for stirring it.

The superiority of sulphuric acid, when properly used, over other desiccants for accurate electrostatic work is clearly established by measurements made with either arrangement. Using acid of strength 95%, the leak, as shown in Table I, Column II and in Diagram IV, can be reduced below one-fifth of the standard maximum permissible value, and can be kept practically constant for more than a week, without stirring or renewing the acid.

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[1] Improvements in measurements in Quadrant Electrometers, part II, 1920.

TABLE I.

I	II	III	IV	V	VI	VII		VIII
						P_2O_5 in doses.		
No. of hours under test.	Strong H_2SO_4 95%	Calcium Chloride.	Sodium in small pieces.	Sodium wire.	P_2O_5 (in dishes).	A First dose.	B Second dose.	Quicklime.
0	..	0·017	0·018	0·012	0·008	0·022	0·023	0·0040
4	0·0011	0·016	0·022	0·013	0·010	0·003	0·004	0·0035
8	0·0015	0·015	0·024	0·014	0·012	0·005	0·004	.0·0050
12	0·0015	0·014	0·025	0·015	0·015	0·006	0·004	0·0055
24	0·0020	0·022	0·028	0·024	0·023	0·016	0·013	0·0047
36	0·0015	0·018	0·024	0·019	0·022	0·019	0·013	
48	0·0015	0·026	0·025	0·022	0·023	0·023	0·020	
60	0·0015	0·025	0·030	0·025	0·024	0·023	0·021	
100	0·0016	0·022	0·021	0·029	0·029			
150		0·026	0·024		0·020			
200			0·026		0·019			

TABLE II.

Showing the abnormal effect observed on leaving the glass stirrer exposed to the air.

No. of hours under test.	Circumstances.	Leak in Volts per minute.
0	Stirrer fully immersed in acid	0·0042
12	,,	0·0044
24	,,	0·0048
36	,,	0·0040
60	,,	0·0050
	Stirrer left partly out	
70	,,	0·0084
	Stirred and stirrer left in	0·0050
100	Stirrer in	0·0055
110	,,	0·0051
	Stirrer left out	
125	,,	0·0090
150	,,	0·010
170	,,	0·014
195	,,	0·013
200	,,	0·011
220	,,	0·014
	Stirred and stirrer left in	0·0061
222	,,	0·0060
224	,,	0·0046

2. Improvements in Measurements with Quadrant Electrometers.

Part II. Simplified arrangements for accurate and continuous work.

By V. H. Jackson, M.A., and A. T. Mukerjee, M.A.

In a previous paper [1] we discussed the difficulties connected with the use of sensitive quadrant electrometers in India, and described arrangements which we had found adequate at Patna to give quite satisfactory results during the dampest weather. The principles underlying these improvements were :—

(1) The elimination of all unessential insulators. By attaching a special key direct to the amber insulators of one pair of quadrants we reduced the number of insulators required for all the ordinary operations in electrometer work to two. namely, (*a*) the insulation of these quadrants; and (*b*) the insulation of the wire connecting the electrometer to any apparatus outside.

(2) Protection from the effects of moisture and electrostatic disturbances in the atmosphere. We enclosed the electrometer and attached key in an outer earth-connected metal case, and operated the key connections from the outside, the air inside the case being kept dry by strong sulphuric acid.

In the actual arrangements then in use, the electrometer was enclosed in a square zinc case fitted on a wooden framework. The connections with the mercury cups of the key were made in the usual manner, by letting down cylindrical pieces of brass with amalgamated points by means of silk loops attached to cotton threads passing through small holes in the case. Drying was effected by soldering up one side of the case after the strong sulphuric acid was introduced, but communication with the outside air was still possible through the four small holes for the threads. These arrangements were evidently open to considerable improvement. The operation of soldering alone took several minutes, during which the acid necessarily deteriorated. As the sealing was not hermetical. moisture gradually entered the case owing to diffusion or temperature differences. For these reasons, as we pointed out,

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[1] Journal and Proceedings, A.S.B., Vol. X, No. 6, 1914, pages 227-240.

the effect of the sulphuric acid could only be relied on to keep the leak in wet weather below the standard value for something like 200 to 300 hours. It was also found that the effect of the moisture absorbed by the wooden framework of the case could not be neglected. With proper hermetical sealing and better arrangements for introducing drying materials into the case, it was thought possible that better results could be obtained by substituting for strong sulphuric acid other desiccants such as Phosphorus Pentoxide or metallic sodium.

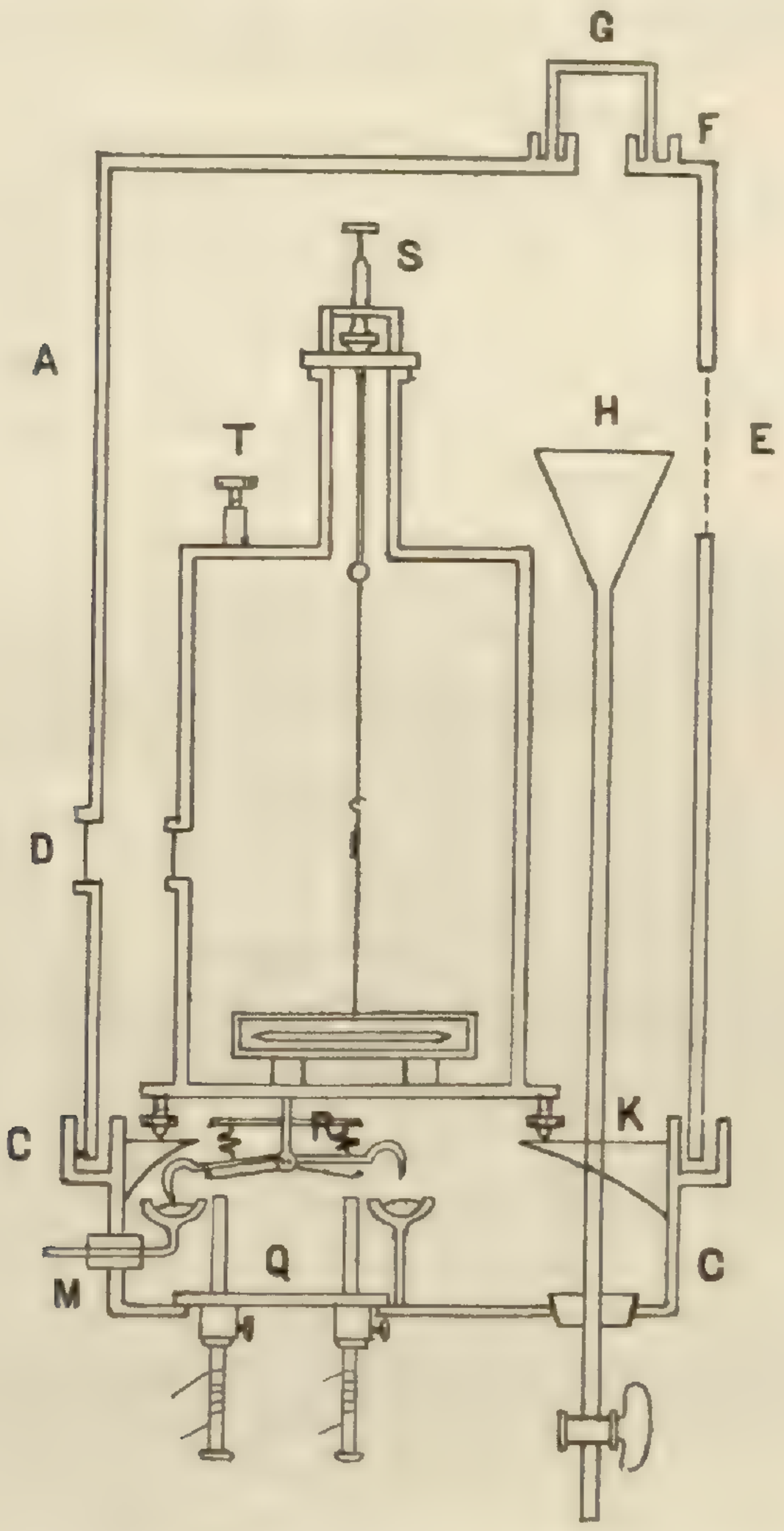
All these problems have since been investigated. A square brass case, free from wood, was constructed, and after much difficulty rendered absolutely air-tight by soldering all edges and stopping the minute leaks with coatings of Canada Balsam in ether. The threads operating the key were led in through small U tubes containing mercury, the communication being rendered perfectly air-tight by the addition of oil. Since the oil increased friction when cotton threads were used, these were replaced by human hair, as experiment showed that this was the material which worked most smoothly. The sulphuric acid was introduced or removed by a double siphon without disturbing the sealing of the case. To eliminate all possibility of the entry of moist air by leakage a slight additional pressure was maintained inside the case. Drying agents other than sulphuric acid were introduced from the top of the case, which could be immediately re-sealed by iron covers dipping in grooves containing mercury and oil. During these investigations several interesting results were obtained, both as regards the superiority of sulphuric acid over other desiccants, and the best method of using sulphuric acid as a desiccant. Most of these were described at the third session of the Indian Science Congress at Lucknow, but have not hitherto been published.

As a result of the experience obtained during these investigations, the whole apparatus has now been re-designed and simplified. Several Dolezalek electrometers fitted with the improved arrangements, including one for continuous self-recording registration of the Earth-air current, have been in constant use in our laboratory for nearly three years, and no further difficulties have been met with. Discussions with other workers in physical laboratories in India have convinced us that a detailed description of the final arrangements now adopted would be useful. These are as follows :—

No alterations have been made as regards the connections operated by means of the key, but the modifications in the methods of working and general arrangements, as shown in the diagram, require explanation.

The outer case is now made cylindrical instead of square, thus avoiding many difficulties in construction, especially by reducing the number of joints, all of which are possible sources

of leakage of moist air. The upper part (*A*) is made of light brass, about 0·5 mm. thick, 22 cms. in diameter, and 40 cms. high. This is removable, and fits into a groove 1 cm. wide by 2 cms. deep turned on the rim of a heavy cast-iron or brass base (*C*). Iron is on the whole preferable, as brass even when protected by paint is liable sooner or later to be attacked by the mercury. The groove is partly filled with mercury and oil, so that hermetical sealing is at once obtained with this



arrangement when the cover is placed in position. The fittings on the removable case are:—

(*D*) A microscope slide sealed with Canada Balsam into a metal frame soldered to the case. These slides when of good quality are plane enough to give a sharp image when light passing through them is reflected from the mirror of the electrometer, as in the ordinary lamp and scale arrangement.

(*E*) A lantern-slide or a piece of ordinary window glass about 8 cms. square, similarly sealed into the case, which serves

to watch the level of the sulphuric acid contained in the funnel (*H*) inside.

(*F*) is an iron ring, soldered on the case with its centre immediately over the funnel. Through this opening, which is ordinarily kept closed and air-tight by an iron cover (*G*) dipping in a mercury and oil groove, fresh sulphuric acid can be introduced into the funnel whenever necessary.

The lower portion (*C*) of the outer case carries the following fittings :—

(*H*) A glass funnel, provided with a tap underneath the base. This funnel passes through a hole (*J*) and is sealed air-tight with pitch composition

In order to make room for the acid funnel, the electrometer is not placed symmetrically inside the outer case. Its levelling screws rest on brass brackets (*K*) 120^0 apart, each of which is screwed on the inner side of the base (*C*). One of the brackets is 12 cm. and the others 5 cm. in length. When the electrometer is placed in position on these brackets a gap of about 10 cm. is left beneath it and the base, and it is possible to get at the key and other fittings underneath the electrometer without disturbing its adjustment.

(*M*) is a sulphur or amber insulator carrying the wire which connects any apparatus outside the case to the mercury cup (*N*), and (*P*) is another mercury cup connected directly to the case, which is of course kept earthed.

(*Q*) is a brass plate about 8 cms. square, soldered over an opening cut in the base. Four soft iron rods 8 mm. in diameter and 18 cms. long (two of which are shown in the diagram) pass through circular holes in the brass plate, each of which is $3\frac{1}{2}$ cms. from the intersections of the diagonals of a square. The level of their ends is adjusted until each attracts the corresponding armature over it sufficiently strongly, and then they are fixed by solder on the brass plate. On the portion of each rod which projects outside the base is wound a high resistance magnetizing coil about 7 cms. long, consisting of 7 layers of No. 36 double silk covered copper wire. The resistance of these coils is made high, about 50 ohms, in order to reduce the current necessary for continuous working to about 0·2 ampere. Unless the heating effect is made as small as possible convexion currents may be set up inside the electrometer case, which cause a drift of the zero of the needle in one or other direction. Owing to the frequent interruptions of the current in the electromagnets, the insulation is severely tested, especially in damp weather and it is essential that each layer should be protected by tissue paper soaked in a solution of celluloid in amylacetate.

The key (*R*), which is the only additional fitting to the electrometer itself, has been considerably simplified and improved. It consists of a vertical wire screwed directly to one

of the quadrants through its amber support, carrying four hinged soft iron armatures about 3·5 cms. long by 0·5 cms. wide. Each armature has a well-amalgamated copper point rivetted at its end which makes connexion when necessary with the corresponding mercury cup placed underneath it. The armatures are suspended by short brass spirals from four horizontal wires attached to the central vertical wire, and as these spirals are soldered at both ends they also serve to establish good electrical connexions between the amalgamated points and the central wire. To prevent the armatures from being pulled too far down and thus touch the cores of the electromagnets suitable stops are carried from the end of the vertical wire. When necessary, one electrometer together with its key can be lifted from the brackets and replaced by another, without any further adjustments.

One of the two mercury cups not shown in the diagram is connected to a cylindrical air-condenser, with amber insulation, supported vertically inside the case, the outer cylinder being earthed. This air-condenser is used for determining the capacity of the electrometer at any time. The fourth cup is supported by a wire through a sulphur or amber plug on the side of the lower part of the case (C) and is used to charge the quadrants to the potential of one or more cadmium cells placed outside the case.

It is necessary to have one more sulphur or amber plug passing through the side of the base (C) in order to lead in the potential for charging the electrometer needle to a suitable voltage. The wire passing through this plug is connected either to the binding screw (S) when a conducting suspension is employed, or to the binding screw (T) on the charging arrangement supplied by the makers for use with quartz fibre. In the latter case the additional arrangement for charging the needle from outside the hermetically sealed case, mentioned in our previous paper, is used. Alignment marks are put on both portions of the outer case, so that the upper cover can be lifted up to examine the internal fittings and replaced in a few seconds with hermetical sealing as before.

In order that the arrangements described may work satisfactorily a few important points require attention.

(1) Should the material of the electrometer needle be slightly magnetic, the comparatively strong magnetic fields set up when one or other of the electromagnets is excited would alter the zero. We have found, however, that when a needle of aluminium foil is used, even with a quartz fibre and a fair degree of sensitiveness (about 300 mm. at one metre for one volt on the quadrants) there is no appreciable disturbance of zero due to this cause.

(2) Another possible source of zero shift is the vibration which takes place in this arrangement when contact between

the point and its mercury cup is broken. If the amalgamation of the point is not satisfactory, or the mercury surface not clean, a slight coherer effect is noticeable at the contact, and the zero of the electrometer is liable to small shifts even when the point is pulled slowly out of the mercury as in the original arrangement. These effects are made all the more probable by any vibrations which occur. but with clean mercury and properly amalgamated points no trouble of this kind is experienced.

(3) The acid used should be boiled with a small quantity of ammonium sulphate, as recommended for Kelvin electrometers. Its specific gravity is thus usually about 1·840 indicating a proportion of about 95% of pure sulphuric acid.

(4) By means of a standardised sliding condenser attached to (*M*) the external connection, the capacities of each part of the instrument may be determined with very considerable accuracy by a method similar to that of Gerdien,[1] which has been worked out independently by Mr. K. N. Bannerjee, M.Sc., Senior Lecturer in this laboratory. As an example of the magnitudes which may be expected, we give the values for one of the electrometers now in use in our laboratory. The capacity of the quadrants with the key, using a 6μ quartz fibre giving sensitiveness 250 mm. per volt when the needle is charged to 14 volts, is 28·5 E.S.U.; that of the external connector *M* with its mercury cup is 7·6 E.S.U. The capacity of the cylindrical air-condenser as calculated from its dimensions, and neglecting end-corrections, was 80·3; but when determined by this method its true value, including its connection to the mercury cup, is obtained and is 83·8 $\pm$ 0·5 E.S.U.

(5) All the insulators which remain inside the case, and are therefore protected from moisture, retain a very high and almost constant degree of insulation; but the problem of maintaining a sufficiently low or sufficiently constant value of the leak on the portion of the insulator (*M*) outside the case which cannot be completely shielded from ordinary moist air has proved to be a very difficult one, especially during very damp weather. The arrangement used by Gockel[2] or Scherring,[3] consisting of a corrugated ebonite insulator with external metal protection and sodium drying, was designed specially for use as an external insulator under such conditions, but it is quite useless for electrometer measurements of any considerable degree of accuracy, except in very dry weather when simple insulators work at least equally satisfactorily. Ebonite is so sensitive to moisture that its use in connection with electrostatic measurements when exposed to ordinary air should be avoided, when-

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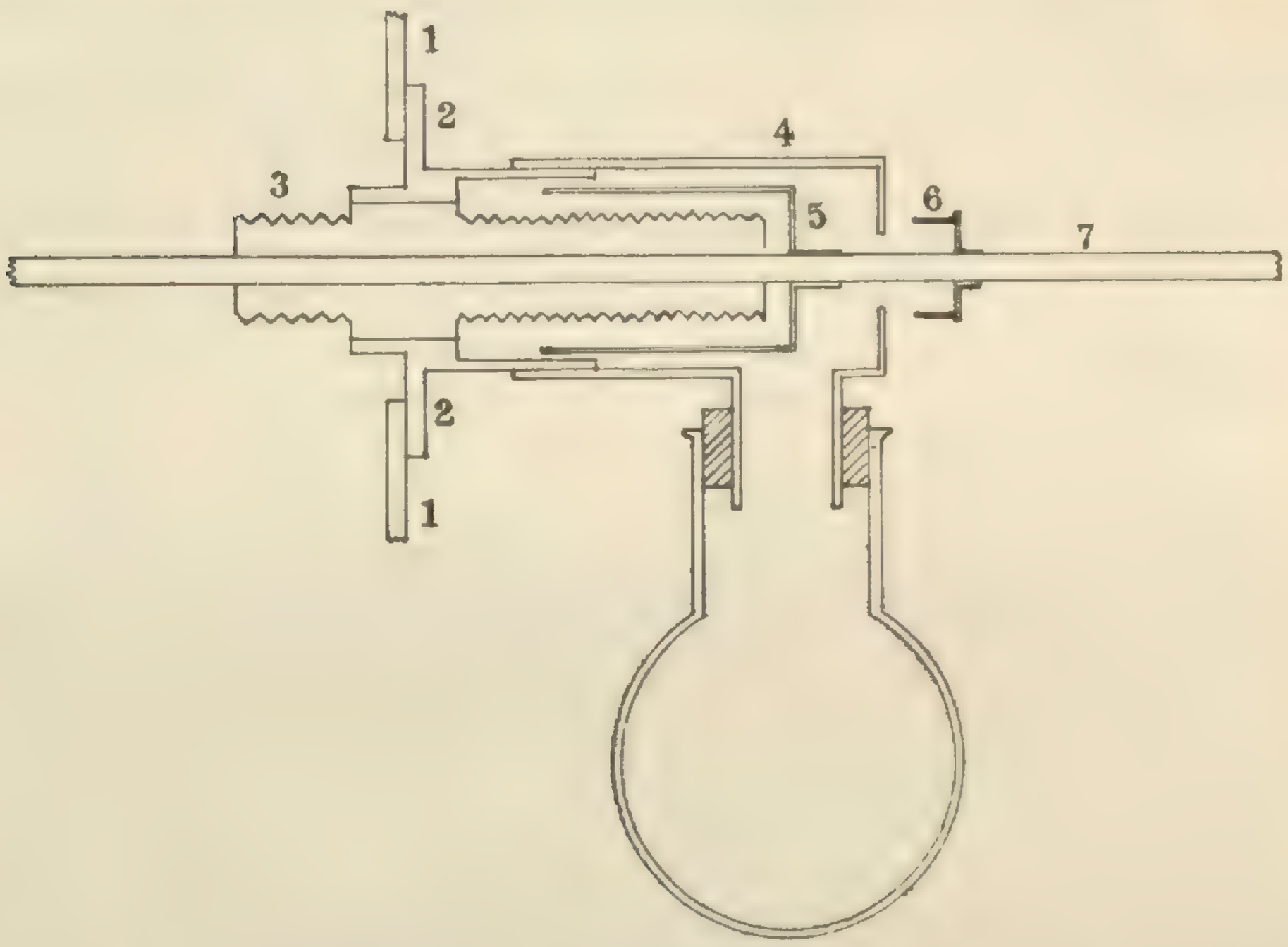
1 Phys. Zeit., Vol. 5, 1904, pages 294-296.
2 „ „ „ 6, 1905, page 328.
3 „ „ „ 5, 1904, „ 452.

ever possible, and as shown in another paper,[1] sodium used as a drying agent tends to increase rather than diminish the natural leak of the insulator which it is intended to protect. After trying numerous modifications of this type of insulator, using amber, sulphur or paraffin for the insulating material, with elaborate protection of the insulator from any currents of moist air, and with either strong sulphuric acid as a drying agent or with slight heating of the surface of the insulator,



none of these have proved satisfactory in practice for work of the highest degree of accuracy, either as regards the degree of insulation secured or the constancy of the leak. This may be seen from the following measurements, typical of a large number of similar observations on the behaviour of insulators protected as shown in Fig. 2. These insulators were of exactly the same size except that the surface of the paraffin was not grooved.

[1] Utility of desiccants in electrostatic work.

Protected insulator. No desiccant used.

Time after exposure to air.	Ebonite.	Amber.	Paraffin.
0	·0067	·21	·0075
15 hours	·014	..	·008
18	..	..	·009
20	..	·013	·017
35	·0090	·015	..
50	..	·014	..
65	..	·023	..

Same insulators. Sulphuric acid drying.

Initial	0·0090	0·013	0·017
Immediately after.	0·0038	0·0097	..
2 hours	..	..	0·0087
4	0·0064	0·0079	..
10	0·015	..	0·020
15	..	0·0097	..

The arrangement for these purposes which we have found most satisfactory up to the present is a much more simple one. Concentric with the connecting wire which passes through the sulphur plug (*S*), Fig. 3, along its axis, a brass cylinder *Q* is also imbedded in the sulphur, thus serving as a guard ring. By means of a connection soldered to a small projection *P* on the outer rim of the guard cylinder this can be charged to any potential either positive or negative. The diameter of the sul-

phur plug is reduced to about 12 mm., that of the cylinder being 8 mm. The external and internal surfaces of the sulphur plug, as well as the ends of the brass cylinder, are made flush with the corresponding surfaces of the case itself. The object of this is partly to reduce surface creep of electrification over the insulator, and partly to prevent dust from collecting on the surfaces exposed to the outer air. By applying to the guard cylinder a potential exactly equal to that of the wire passing through the sulphur plug, the effect of any leakage

due to moisture on the surface of the latter as well as conduction would be entirely eliminated. By reversing the potential of the guard cylinder this leakage effect should be doubled, thus giving an estimate of its amount. In practice, the guard ring is kept at the potential of the cadmium cell used to charge the quadrants, and since the potential of the wire passing through the sulphur plug is never higher than this and is usually lower, the leakage due to moisture and conduction is employed to reduce the leak of the whole system consisting of the quadrants connected to the wire.

The following table, showing result of observations taken with the guard-ring, indicates the very great improvement effected in the insulation of the sulphur plug even during the monsoon. Of the observations taken on the 21st of August, 1919, Column D shows the rates of leakage of the quadrants alone. Column C shows that the rates of leakage of the quadrants with the sulphur plug having its guard-ring properly charged are almost equal to those of the quadrants alone. Columns A and B show the increase in the leak by earthing the guard-ring or by putting the opposite potential on it. Similar results were obtained on the next day with a positive charge on the quadrants, and the agreement between the Columns D and B is as satisfactory as before.

TABLE.

Date	No. of observations.	Charge on Q or Q + Plug.	Leakage Through Q + Plug with Guard-Ring.			Leakage through Q alone. D.
			Earthed. A.	+ 1 Volt. B.	—1 Volt. C.	
21-8-19.	I	—1 volt.	0·0046	0·0079	0·0032	0·0032
	II	,,	0·0053	0·0071	0·0038	0·0039
	III	,,	0·0060	0·0081	0·0037	0·0038
	IV	,,	0·0068	0·0079	0·0048	0·0044
	Mean		0·0057	0·0078	0·0039	0·0038
22-8-19.	I	+ 1 volt	0·0046	0·0029	0·0054	0·0020
	II	,,	0·0051	0·0029	0·0057	0·0027
	III	,,	0·0056	0·0030	0·0067	0·0034
	IV	,,	0·0057	0·0036	0·0069	0 0040
	Mean		0·0052	0·0031	0·0062	0·0030

3. A Loom used by the Gaodar (Herdsmen) of Seistan.

By N. Annandale, D.Sc., F.A.S.B.

(With Plates I—II.)

The loom here described was seen in use in a Gaodar encampment on the shores of the Hamun-i-Helmand by Mr. S. W. Kemp and myself in December, 1918. The figure is reproduced from a drawing based on photographs taken for the purpose by Mr. Kemp. I have to thank Mr. H. G. Graves for much assistance in drawing up the description; the technical terms in which are those employed by Ling Roth, *Journ. Anthrop. Inst.*, XLVI. p. 284, fig. 1 (1916).

The loom is of the horizontal type but is fitted with a vertical apparatus for the suspension of a shed-stick and heddle-rod. The threads of the warp are stretched on the ground between two sticks of tree-tamarisk. The stick (*a*) at the end at which weaving commences (the cloth-beam) is secured in position by being placed behind two pegs driven into the ground, while the other stick or warp-beam (*b*) is fastened by a loop of rope at either end to two other pegs. The warp can be drawn taught by tightening these ropes. A vertical tripod consisting of three sticks (*c*, *c*, *c*) six feet or more in length is used to suspend the shed-stick and heddle-rod. These sticks are tied together above; two of the legs are inserted into the ground one on each side of the warp near its middle and the other near the warp-beam in front but also at one side. As the weaving proceeds the position of the tripod must be altered. From its apex a stick about two and a half feet long is suspended across and a considerable distance above the warp. It is also lashed to the two hinder legs of the tripod in such a way as to be practically immovable. A shorter stick (*e*) rests on the upper suspender at right angles and supports the shed-stick (*f*) and heddle-rod (*g*), to which it is fastened, at one end to each, by ropes about three feet long. It is freely movable backwards and forwards, and when the end near the cloth-beam is pulled down the shed-stick is raised and the odd and even threads separated; when it is pushed up the heddle-rod pulls the odd threads (*i*) up between the even threads of the warp (*h*). Both the shed-stick and the heddle-rod are roughly-shaped tamarisk twigs between two and a half and three feet long, each a little longer than the width of the warp. The odd threads are fastened to the heddle-rod between the even threads by separate loops of wool, one for each thread, and the loops are fixed to a transverse thread

which runs along the front of the heddle-rod and is there firmly tied in position.

As a rule two women work together at this kind of loom, both squatting on the web (*k*) and one inserting the thread of the woof, which she holds roughly bundled together without a shuttle, by hand, while the other wields the beater-in and manipulates the heddle-rod and shed-stick. A single woman can, however, work alone.

The beater-in (fig. 2, pl. II) resembles the specimen, probably from Persia, figured by Ling Roth in *Journ. Anthrop. Inst.*, XLVIII, p. 130, fig. 195A, except that the handle and body are in a straight line. They are carved out of a single piece of wood and on the back of the body there is a metal shield, sometimes of brass, sometimes of iron and often partly of one metal and partly of the other. It is fixed on by nails. The other surface is not protected but is often ornamented by crude carving (see figure). The metal shield not only strengthens the implement but also helps to keep in position the raw hide by means of which the teeth of the comb are fixed to the body. These teeth are abruptly curved copper blades, seven in number. Their bases are inserted into the wood and covered by a piece of raw hide in which slits are cut for the protrusion of the teeth. This has evidently been applied wet and allowed to dry in position before the metal shield has been fastened on. The straightness of the beater-in is probably correlated with the fact that the weaver sits on the web and strikes downwards with it. Compare the figure of a Lycian weaver working at an upright loom with a curved or bent beater-in reproduced by Ling Roth in the paper cited above (*Journ. Anthrop. Inst.*, XLVIII, p. 123, fig. 12).

The whole apparatus is probably degenerate rather than primitive, its peculiarities depending on the difficulty experienced by the Gaodar in obtaining timber. A minimum of wood is used in its construction and the crooked branches of the tree-tamarisk are utilized perforce. Even these have to be brought from Miankangi, a remote district situated between the main effluents of the Helmand. The tripods and suspenders are thus valued possessions and may always be seen when not in use leaning against the walls of the reed huts of the Gaodar (plate I).

The woollen cloth made with this loom is a coarse blanket-like material, as a rule black with white or grey transverse stripes but without other pattern. It is produced in long strips not more than two and a half feet wide. A similar type of loom is used by Baluchi women in Seistan for weaving carpets. See Tate's *Seistan*, part IV, plate opposite page 323. This plate is, however, not quite clear as to details and I did not see the carpet-loom myself.

EXPLANATION OF PLATES.

Plate I.

Gaodar encampment at the edge of the Hamun-i-Helmand, showing loom-frames resting against the huts of reed-matting.

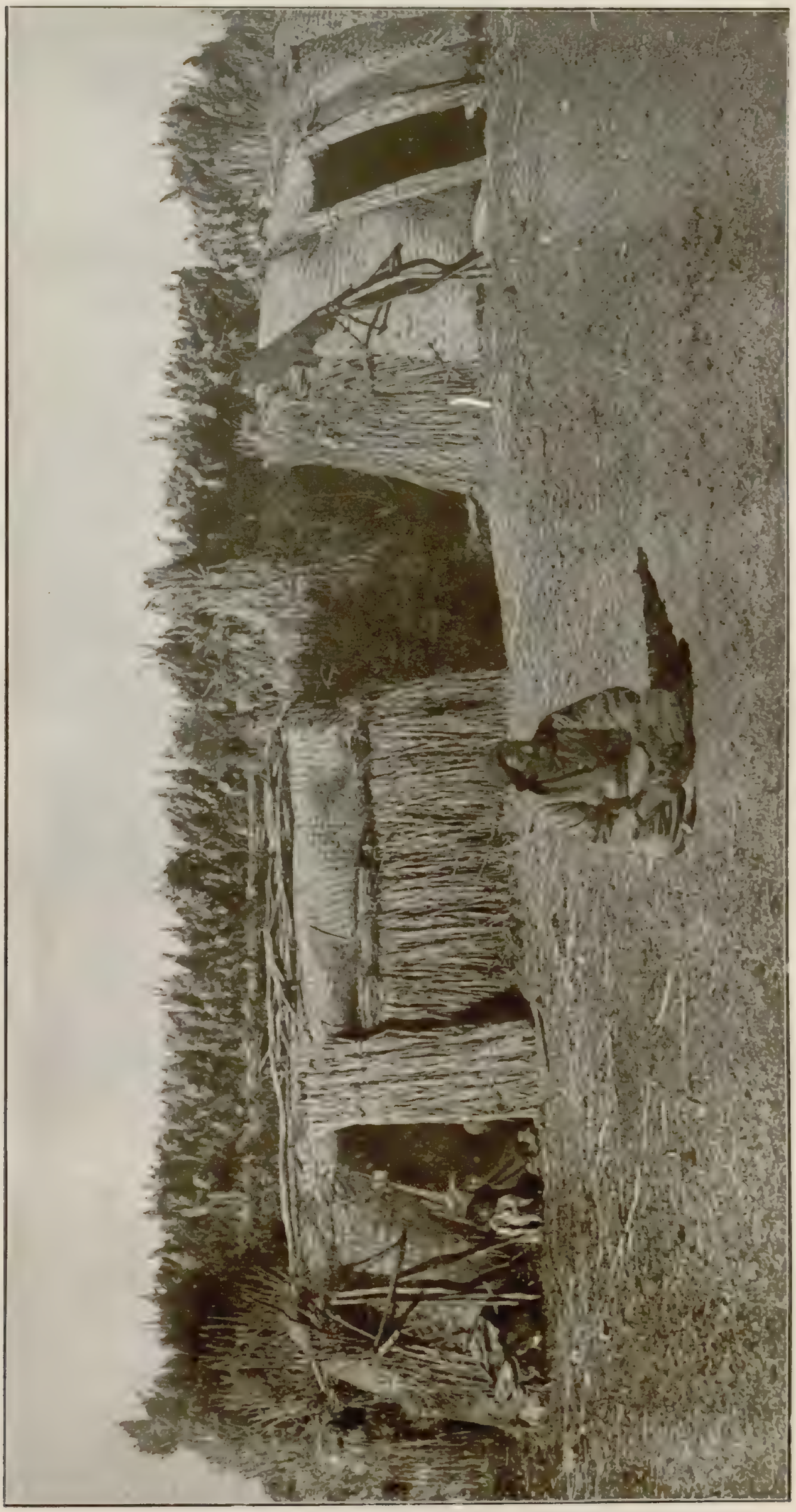
Plate II.

Fig. 1.—Gaodar loom, Seistan.

a = cloth-beam; *b* = warp-beam; *c* = stick supporting suspensorium; *d* = transverse rod of suspensorium; *e* = rod supporting shed-stick (*f*) and heddle-rod (*g*); *h* = even threads of warp; *i* = odd threads of warp; *k* = web of cloth.

Fig. 2.—Beater-in or weaver's comb; much reduced.

Fig. 3.—Two Gaodar women weaving at the loom.



GAODAR ENCAMPMENT, SEISTAN

2.

1.

GAODAR LOOM, SEISTAN.

4. Further Notes on the Genus Camptoceras (Mollusca Pulmonata).

By N. Annandale, D.Sc., F.A.S.B., and Baini Prashad, D.Sc. (*Zoological Survey of India*).

Since we submitted to this Society last year our notes on the genus *Camptoceras*, Benson, two events have occurred that cast further light on its taxonomic position. These are the publication by Walker (a few days earlier than our paper) of a description of the Japanese species and the discovery by one of us of specimens of a new species from Kashmir, closely allied to *C. lineatum*, in the collection of St. Xavier's College, Bombay. We are thus placed in a better position to estimate the exact status and relationships of the genus. Before discussing these points we will give a few notes on the two species *C. hirasei*, Walker, and *C. subspinosum*, sp. nov.

Camptoceras hirasei, Walker.

1919. *Camptoceras hirasei*, Walker, *Occ. Papers Mus. Zool. Univ. Michigan*, No. 64, pp. 1-6, pl. i (March 17th).

1919. *Camptoceras* sp , Annandale & Prashad, *Journ. As. Soc. Bengal* (*n.s.*) XIV, p. 458, pl. xii, fig. 2.

Walker discusses not only the shell of his new species but also the external anatomy, the radula and certain of the internal organs. His material was, however, defective, and he was unable to give any account of the genitalia. His figures of the shell and radula do not altogether conform with our own and we are not able to accept his description of the radula as accurate.

So far as the shell is concerned we believe that the discrepancies are probably due to the fact that his specimens were not so mature as ours. It is true that they were slightly larger than those we examined, but considerable variation in size must always be expected in aquatic pulmonates and the mouth and adjacent parts of the shell he figured were, to judge from his plate, less perfectly developed than those of the specimen figured by us. In our specimen there was a vertical ridge or varix on the outer aspect of the body-whorl that seemed to indicate that the animal had undergone at least one period of arrested growth. No such ridge is shown in Mr. Walker's figures. Our specimen was killed in

October and possibly the difference is due to the two series having been collected at different seasons.

In the dried material we examined we were unable to find any trace of the horny jaw, but Mr. Clapp's description of it is confirmed by an examination of the same region in our new species. The jaw is evidently very like that of *Planorbis*, consisting of a slender transverse centre-piece and two still more slender lateral pieces.

As to the radula, Mr. Walker states that the central tooth is bicuspid and that the bases of all the teeth are quadrate. In our preparation of two radulæ of the Japanese species we find some difference in respect of the central tooth. In one it is tricuspid, in the other quadricuspid, the two middle cusps being much the longest. In this tooth, therefore, it is possible that the apparent discrepancies between the two descriptions are due merely to individual variation. This is not so, however, with the form of the base of the laterals and marginals. A re-examination of our preparations and a comparison with others of the radula of *C. subspinosum* convince us that we were right in figuring these teeth as produced and bluntly pointed at the base. Radular teeth so minute as those of the aquatic pulmonates are always difficult to examine in detail, and Mr. Walker's figures can only be described as somewhat crude.

We do not think that there can be any doubt that the American malacologist and we ourselves were dealing with the same species. To prevent any misconception as to the appearance of rivalry due to the practically simultaneous publication of our papers on the subject, we wish to state that we had invited Mr Walker to publish his description first and that he had agreed to do so in a most courteous manner.

Camptoceras subspinosum sp. nov.

This species (fig. 1) is, as we have said, closely allied to *C. lineatum*, Blanford,[1] but differs in the following characters:—

(1) The shell is considerably larger and more elongate and has 4 instead of 2½ whorls.
(2) Its whorls are more convex and less oblique and the suture is less well defined, not so deep and broader.
(3) The mouth of the shell is longer in proportion to its breadth and narrower above.
(4) The sculpture consists of spiral lines of minute sub-

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[1] See Blanford, *Journ. As. Soc. Bengal* XL, p. 40, pl. ii, fig. 3 (1871). The description is reprinted in Gude's volume on the Mollusca (II) in the *Faun. Brit. Ind.*, p. 464, fig. 144 (1914).

spinose tubercles [1] with very fine longitudinal and transverse striae between them.

So far as shell-characters are concerned this species provides a link not only between *C. lineatum* and *C. hirasei* but also between the genus as a whole and the Malayan and Australian species of *Bullinus*.

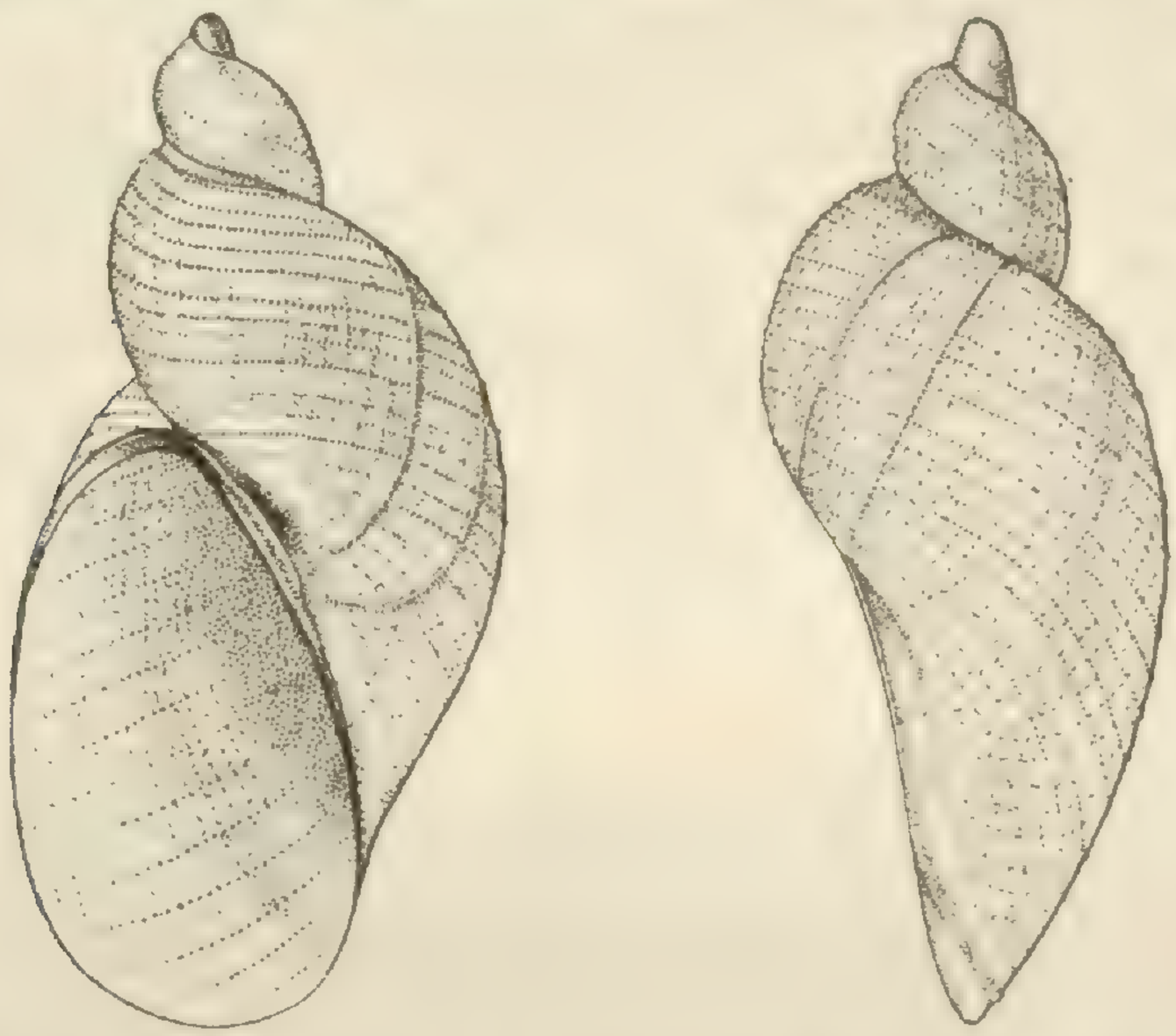

FIG. 1.—Type specimen of *Camptoceras subspinosum*, sp. nov.

The radula (fig. 2) is very similar to that of *C. hirasei*, but the teeth are distinctly longer and the central differs in having larger cusps. In one radula the cusps of this tooth are distinct, two in number, while in another they are fused together

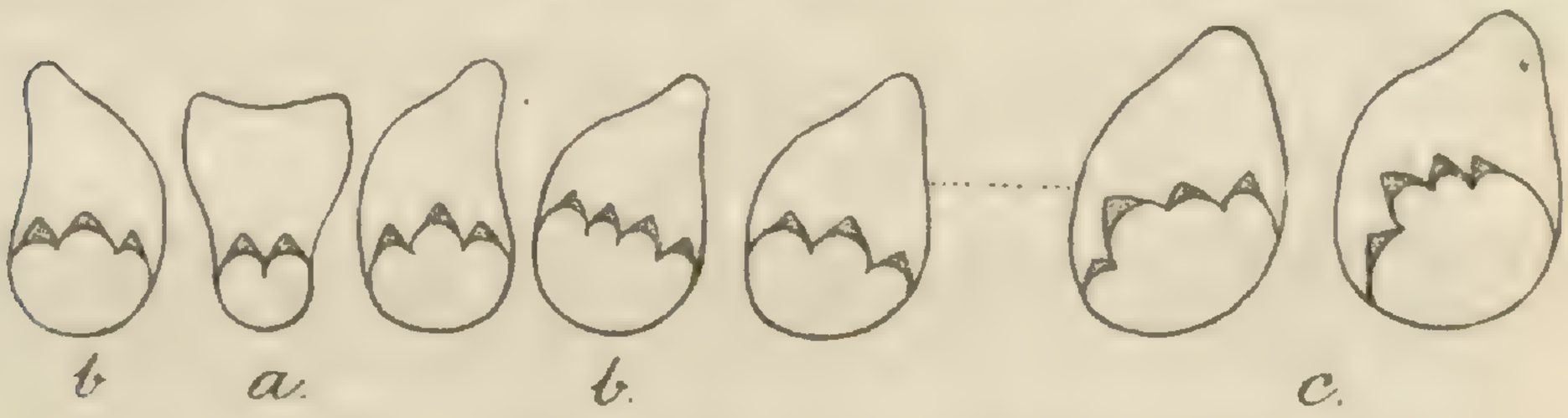

FIG. 2.—Radular teeth of *Camptoceras subspinosum* sp. nov.
a=central ; *b*, *b*=laterals ; *c*=marginals.

so that the tooth is really unicuspid. In our preparations of this species it is clear that the extremity of the cusps of all the teeth is produced into a sharp spine-like process as in *Planorbis* and allied genera, but this process is extremely

[1] This character is better seen in specimens in spirit than in dry shells and may not be differential.

minute and delicate. The approximate dental formula is 7. 11. 1. 11. 7, the laterals being more numerous than in *C. hirasei*.

The jaw closely resembles that of *C. hirasei* as figured by Clapp in Walker's paper.

Our specimens are preserved in spirit but appear to have been completely desiccated at some period. It is impossible to make out much of their anatomy, but we have succeeded in extracting the penis-sheath, which is elongate as in *Planorbis* and its allies. The tissues are badly preserved and it is impossible to see details of the structure, but there is certainly no penial stylet.

The external anatomy is evidently closely similar to that of *C. terebra* and *C. hirasei*.

Measurements of Shells (in millimetres).

	I	II	III
Length	5·3	5·2	5·5
Diameter	2·5	2·5	2·6
Length of Mouth	3·4	3·6	3·6
Diameter of Mouth ..	1·7	1·7	1·9

Type-specimen. No. M $^{1\ 1\ 6\ 7\ 1}/_{2}$ in the collection of the Zoological Survey of India (*Indian Museum*).

Habitat. The series we have examined was collected by Prof. F. Hallberg of St. Xavier's College, Bombay, on the road between Khanabal and Islamabad in Kashmir (alt. between 4,000 and 5,000 ft.) on April 15th, 1916. A young specimen was also found by the same collector in the Chenar Bagh at Srinagar (alt. 5,250 ft.) on March 23rd of the same year.

The adults were found in a small, very shallow pool, apparently recently dug, without vegetation and with an area of only about 12 square yards. They were attached to the lower surface of small submerged stones. The young individual was on the under surface of a dead plane-leaf in a small canal.

Taxonomic position of the genus Camptoceras.

We are now in a better position to estimate the taxonomic status of *Camptoceras* correctly than we were when writing our former note. We accept Walker's view that the genus belongs to the Planorbidae, not to the Ancylidae as we formerly thought. The structure of the jaw and of the form of the penial sheath affords strong evidence in favour of this view, as does also the minute structure of the radular teeth. The shell-form of our new species, moreover, is less different from that of *Bullinus*, Adanson, than that of any species of *Camptoceras* previously described. As we have already pointed out, this species closely resembles *C. lineatum*. In describing the latter the late Dr. Blanford expressed a doubt as to its

being congeneric with *C. terebra* and *C. austeni.* Here again, however, *C. subspinosum* is an annectant form, the more elongate shape of its shell and less contiguous whorls bringing it distinctly nearer to the extreme species of the genus than is *C. lineatum.*

Considering the four species of *Camptoceras* now known together, the propriety of separating them from the genus *Bullinus* may possibly be doubted. The shells of such species as *B. aliciae* (Sowerby) and *B. acutispira* (Tryon) are not very different from those of *C. subspinosum* in general structure and the radulae of the two genera have a somewhat similar facies. In no species of *Bullinus*, however, are the whorls so oblique or so angulate, or the suture so broad and canal-like as in *Camptoceras.* The radular teeth,[1] moreover, are much fewer in each transverse row in *Camptoceras* and have the sharp point of the cusps much less well developed and the gill is not lobose. We are of the opinion, therefore, that *Camptoceras* should be placed provisionally in the subfamily Bullininae but not in the genus *Bullinus.*

We give here, to facilitate recognition of the subfamily, genera and species, a brief synopsis.

Subfamily Bullininae.

Planorbidae in which the shells are ovoid or elongate and acuminate, never disc-shaped.

Key to the genera of Bullininae.

1. Shell with the whorls more or less swollen, the suture linear or almost so .. .. *Bullinus.*
2. Shell with the whorls angular or subangular and extremely oblique, the suture very broad and deep .. .. .. *Camptoceras.*

Genus **Camptoceras**, Benson.

1843. Benson, *Calcutta Journ. Nat. Hist.* III, p. 465.
1855. id., *Ann. Mag. Nat. Hist.* (2) XV, p. 10.
1871. Blanford, *Journ. As. Soc. Bengal* XL, p. 40.
1914. Gude, *Faun. Brit. Ind. Moll.* II, p. 460.
1919. Walker, *Occ. Papers Mus. Zool. Univ. Michigan,* No. 64, p. 1.
1919. Annandale and Prashad, *Journ. As. Soc. Bengal* (*n.s.*) XIV, p. 458.

Key to the species of Camptoceras.

1. Shell extremely elongate, at least 3 times as high as broad, without strong spiral sculpture.

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[1] See Cook, *Proc. Zool. Soc. London* 1899, pp. 136-143.

A. Shell less than 4 mm. long, with 2 whorls; its mouth with narrow attenuated peristome, regularly oval or ovate, at least $1\frac{3}{4}$ times as high as broad .. .. *C. austeni.*

B. Shell at least 6 mm. long, with $3\frac{1}{2}$ whorls; its mouth with a broad attenuated peristome, narrowly ovate, a little more than twice as high as broad .. .. *C. hirasei.*

C. Shell at least 8 mm. long, with 4 whorls; its mouth with an incomplete, narrow attenuated peristome, irregularly ovate, more elongate than in the other species *C. terebra.*

II. Shell irregularly ovate, less than 3 times as high as broad, sculptured with strong, sometimes subspinose spiral lines.

A. Shell not more than 4·5 mm. long, with $2\frac{1}{2}$ whorls; the suture well-defined and angulate at its margins; the mouth irregularly oval *C. lineatum.*

B. Shell over 5 mm. long, with 4 whorls; the suture much less well defined and not so angular at the margins; the mouth ovoid, narrowed above .. .. *C. subspinosum.*

Addendum.

Since this paper was written I have found *Camptoceras lineatum* living on the lower side of grass-stems in a small muddy channel of sluggish water running into the north end of the Loktak Lake in Manipur, Assam.

The spiral lines on the shell are subspinose, but not so distinctly so as in *C. subspinosum.*

The animal resembles that of *Gyraulus* except in possessing a curious epipodial siphon on the left side instead of a simple V-shaped process. The foot is narrowly tongue-shaped, bluntly pointed behind and not extending much beyond the apex of the mouth of the shell when fully expanded. The snout is broad and blunt. The tentacles are long, filiform and slightly clavate; externally they are somewhat expanded at the base, while internally they bear the small, black, sessile eyes in the same position. The mantle does not extend over the shell and has simple margins. On the left side the epipodial lobe arises posteriorly as a short, simple expanded ridge and then grows out into a relatively long, broad, leaf-like process, which can be folded spirally on itself in such a way as to form

a stout conical siphon about as long as the tentacles when fully expanded. A large oval, downwardly directed aperture remains open at the extremity, and the faecal pellets are emitted through this. The branchial cavity is ample and patent when the animal is expanded.

Manipur, 20-11-20. N. ANNANDALE.

5. The Tigari—a primitive type of boat used in Eastern Bengal.

By B. Prashad, D.Sc., *Offg. Director of Fisheries, Bengal, Bihar and Orissa.*

The principle of the adaptation of very simple structures to very complex purposes, is, I believe, very well brought out

Fig. 1.

Fig. 1a.

in the case of the peculiar type of boat of Eastern Bengal, known as the *tigari* or *gamla*.

This peculiar structure is made of baked clay and is a circular tub-shaped structure (fig. 1) measuring two feet and

a half in transverse diameter in a typical specimen. The bottom is not flat, but owing to the sides curving down regularly, it has almost the form of a hemisphere : the height, or rather the depth, of a *tigari* is fifteen inches.

Tigaries are prepared on the ordinary turning-wheels of potters in the usual way and, after drying. are baked like ordinary pottery. The colour of a *tigari* from Dacca is black-

Fig. 2.

ish though others of brick-red colour are found there and in other parts. This difference of colour is due to the composition of the clay. A *tigari* is ordinarily sold for about a rupee.

As shown in fig. 2, which is the reproduction of a photograph of a *tigari* in use in the river Padma near Tarpassa in Eastern Bengal, the structure is not used as a float in the inverted position, like pitchers and earthenware *chaties* used in practically all parts of India. It is, on the other hand,

used as a true boat, in the upright position with the concavity upwards A little more than six inches of the upper margin remains above the surface of the water when the *tigari* is in use. The conical lower portion serves as a keel, displacing a large quantity of water and thus helping in making it a much more steady structure than the flat-bottomed coracle. For the seat a small wooden plank is mostly placed a little above the bottom ; in some cases, however, quantities of grass and other cattle-fodder fill up the concavity of the vessel and serve as a fairly comfortable seat Only a single paddle, of the type (fig. 1, *a*) ordinarily used by boatmen in Bengal, is used both for paddling and as a rudder. The course of movement is altered by the use of the paddle on alternate sides, and for progression the paddle is used in the ordinary way. When paddling is carried on, the *tigari* travels in a fairly straight course, but when allowed to drift with the current it turns round and round in a whirligig fashion. The rate of movement is quite fast, and in many cases fairly long distances are covered in these frail structures.

At the present day, the *tigari* is in use in various parts of Eastern Bengal, particularly in the districts of Dacca and Rajshahi. It is used by men, women and even children for crossing streams and for going from place to place. In the various districts of Eastern Bengal, where the lands are for a large part of the year covered over with water, and where movement from place to place, and even from one house to another, is impossible except by the use of some type of boat, nothing less costly and more useful as a handy type of craft could have been devised. Originally the *tigari* was nothing more than the basin for feeding the cattle, a purpose for which it is used even to-day. Probably by chance it was found that it could be used as a boat also, and was thereupon adopted by all classes, and particularly the poorer people who can barely afford the luxury of a boat or even a dugout. It is of interest to mention in this connection that practically all the inhabitants of Eastern Bengal are good swimmers, and all they require is some sort of a craft for fording streams and moving from place to place.

The words *tigari* and *gamla* are both very significant. *Tigari* is derived from *tigar*, which is the name of a somewhat oval structure made of dry earth for the purpose of making clay-mortar by mixing water and earth. The word *tigari*, therefore, signifies something made of clay and is really a very general term. The term *gamla* means a flower-pot or the basin used in feeding cattle. Both these names are rather inappropriate, except in so far as one is descriptive of the material of which the structure is made, and the other throws some light on the original nature of the *tigari* or *gamla*.

This peculiar type of boat has the same circular form as a

coracle, but differs, as has been mentioned already, in having a conical instead of a flat bottom. The two structures seem to have been evolved quite independently of one another, and it is impossible to find any near relationship between them. Just as the coracle is very suitable for rapidly running mountain streams, so the *tigari* is well adapted for rivers and bhils in the plains. Here owing to the clay-like nature of the soil and the absence of stones and boulders on the banks, the chances of a *tigari* breaking to pieces are very few. The only danger is the upsetting of the whole craft, if it is not properly managed; but people using these *tigaries* are very clever in managing them. It may be mentioned in this connection that a "*tigari race*" nowadays forms an interesting event in various athletic tournaments in Eastern Bengal. The skill required in managing the craft is undoubtedly very great, even the least excitement or the smallest mistake is quite enough to overturn it, still the usefulness of these structures for the poorer classes cannot be ignored.

6. The word "Taghār" explained.

By Maulavi 'Abdu'l Wali.

In the March Monthly General Meeting of the Society Dr. B. Prashad read a paper entitled, "The Tigari—a primitive type of boat used in Eastern Bengal." He tried to explain the word, but apparently without success. I have since discussed the subject with various persons, and consulted a large number of lexicons.[1] The following is the result of my inquiry:—

The correct word as written and pronounced is Taghār (تغار); it is also written as Taghāra (تغارہ). The illiterate Indians often drop the aspirate and pronounce it as Tagār. The form *Tigari*, so far as I understand, is never used, even in Eastern Bengal. Philologically the word is Turki, used indifferently in Persian and Hindustānī. The root meaning of Taghār is an earthen dish or bowl (tasht-i-gilin), tub, bucket, pail, platter. The secondary meaning of the word is anything put into it for eating, drinking and for other purposes: hence it means also any certain allowance of provisions or stipends on which a person depends; also a measure for barley, wheat, etc., a wash-tub; a provision bag hung by a person at each side of his horse.

The word is commonly used in India, especially in Bengal by masons as mud or lime pit. Taghār bujhana is to make mud or lime cement. The form taghāri (تغاری) (*vulg.* tagāri) has the meaning of a kneeding-trough, a trough, a coracle (dōṇgā or dōṇgī). The taghāri or earthen bowl used in crossing a rivulet or channel is not exclusively used in Eastern Bengal, but also in Northern Bengal.

The word taghār is extensively used in Turki and Persian literature. In the Zafarnāma of Sharfuddīn 'Ali of Yazd, the word is frequently used in the sense of allowance of provisions and stipends. Mullā Sa'īd Haravī says—

از برای مطبخ انعام او کیوان ز چرخ
ز ارتفاع سنبله هر روز بفرستد تغار

For his kitchen of bounty the Saturn from heaven
at the height of Virgo sends taghār (provisions).

In the dialect of the Turks of Mughulistan, taghār

[1] Burhan-i-Qāti', Bahār-i-'Ajam, Ghiyāṣ, Farhaṇg-i-Anandraj, Francis Johnson, Forbes, Fallon, etc., etc.

ḍāḍan—to give taghār, is to give a sumptuous feast, or to provide with āsh or dry bread.[1]

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[1] The following is the Persian text from Persian lexicons mentioned in note 1 in previous page :—

تغار بروزن قطار طشت گلی را گویند و بمعني خوردني و آذوقه و راتب هم آمده است و بمعني پیمانه *

طشت گلین است که دران آب کنند و غذا نیز خوردند یا گندم و جو پر کنند در اصطلاح اتراکِ مغل تغار دادن مهمانیٔ بزرگ و آش دادن است و انرا تغاره نیز گویند *

Proceedings of the Annual Meeting, 1920.

FEBRUARY, 1920.

The Annual Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th February, 1920, at 9-15 P.M.

MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, M.A., C.I.E., F.A.S.B., President, in the chair.

The following members were present :—

Maulavi Abdul Wali, Dr. N. Annandale, Mr S. N. Bal, Dr. U. N. Brahmachari, Dr. P. J. Brühl, Dr. W. A. K. Christie, Hon. Mr. J. C. Cumming, Mr. O C. Ganguli, Pandit Amulya Charan Ghosh, Vidyabhusana, Rev. Sramana Wan Hui, Babu Satya Charan Law, Mr. Johan van Manen, Maulvi Mohammad Yusuf Hashmi, Dr. H. W. B. Moreno, Dr. Baini Prashad, Major R. B. Seymour Sewell, Aga Mahammad Kazim Shirazi, Mr. E. Vredenburg, Mr. H. Walker.

Visitors :—Mr. R. A. Burns, Mr. Madhabdas Chakravarty, Mr. C. Cleghorn, Miss D. Cleghorn, Mr. B. M. Cooper, Mr. N. Dutt, Mr. Sudhansu Bhusan Datta, Mr. Baroda Charan Gupta, Mr. Jyotish Chandra Gupta, Maulvi Mohammad Abdul Mohyi, Mr. Monindra Mohan Ray, Mrs. Sewell, Mr. K. F. Watkinson, Mr. and Mrs. F. E. Wentworth Shields, Mr. S. Taj Mohammad, and others.

The President ordered the distribution of the voting papers for the election of Officers and Members of Council for 1920 and appointed Sir Charles Kesteven and Mr. Amulya Charan Ghosh, Vidyabhusana, to be scrutineers.

The President announced that the Trustees of the Elliott Prize for Scientific Research had awarded the Prize for the year 1919 to Dr. Jnandra Chandra Ghosh for his four essays entitled : (1) The Abnormality of Strong Electrolytes, Part I. Electrical Conductivity of Aqueous Salt Solutions ; (2) The Abnormality of Strong Electrolytes, Part II. The Electrical Conductivity of Non-aqueous Solutions ; (3) The Abnormality of Strong Electrolytes, Part III. The Osmotic Pressure of Salt Solutions and Equilibrium between Electrolytes ; (4) The Electrical Conductivity of Acids and Bases in Aqueous Solutions.

The Annual Report was then presented.

Annual Report for 1919.

The Council of the Asiatic Society has the honour to submit the following report on the state of Society's affairs during the year ending 31st December, 1919.

Member List.

The number of Ordinary Members at the close of 1919 was 371. The number of Ordinary Members elected during 1919 was 39. Out of these thirteen have not yet paid their entrance fees. The number of Ordinary Members added, therefore, is 26. One member whose name had been removed from the Member List as a defaulter under Rule 38, has paid his arrear subscriptions, and was reinstated under Rule 39 as a member of the Society, making a total of 27 Ordinary Members added to the last list. On the other hand, 16 have withdrawn, 7 died, 5 were struck off under Rule 38, and 10 were struck off under Rule 40.

The number of Ordinary Members in the past six years is as follows :—

Year.	Paying.				Non-Paying.			Grand Total.
	Resident.	Non-Resident.	Foreign.	Total.	Life.	Absent.	Total.	
1914	191	197	19	397	26	50	76	473
1915	171	188	21	280	25	40	65	445
1916	145	159	18	322	25	60	85	407
1917	150	144	15	309	24	45	69	378
1918	153	145	17	315	24	43	67	382
1919	142	138	16	296	25	50	75	371

The following members died during the course of the year :—Rai Bahadur Monmohan Chakravarti, Mr. James Crawford, The Hon. Mr. W. A. Ironside, Nawab Haji Mahomed Ishak Khan, Dr. Amrita Lall Sircar, Mr. V. Subramania Iyer, and Dr. L. P. Tessitori.

One member, Dr. J. L. Simonsen, has compounded for his subscriptions during this year.

The number of Special Honorary Centenary Members remains unchanged at 2.

There were four deaths among the Honorary Fellows :—

M. Jean Gaston Darboux, Professor John Wesley Judd, Dr. A. F. R. Hoernle, and Lord Raleigh. The number of Honorary Fellows is now 18.

The name of Mr. H. Bruce Hannah has been added to the list of Associate Members. The number now stands at 11.

Fellows of the Society.

At the Annual Meeting held on the 5th February, 1919, J. Coggin Brown, Esq., O.B.E., M.I.M.E., F.G.S.; W. A. K. Christie, Esq., B.Sc., Ph.D.; D. R. Bhandarkar, Esq., M.A.; and Major R. B. Seymour Sewell, I.M.S., were elected Fellows of the Society.

There was one death among the Fellows, viz. Rai Bahadur Monmohan Chakravarti. Two Ordinary Members, viz. Lieut.-Col. Sir S. G. Burrard, K.C.S.I., and Lieut.-Col. J. Stephenson, I.M.S., resigned their membership of the Society and they ceased to be Fellows under Rule 2A.

There were 36 Fellows on the list at the end of 1919.

Office-bearers.

In June Mr. S. W. Kemp resigned his post as Biological Secretary of the Society and Dr. F. H. Gravely was appointed in his place. Dr. W. A. K. Christie took charge of the current duties of Treasurer in the absence of Mr. R. D. Mehta for two weeks in December, when Mr. D. R. Bhandarkar was appointed Treasurer during Mr. Mehta's absence.

There have been no other changes among the Officers of the Society since the last annual election.

Office.

Mr. J. H. Elliott continued as Assistant Secretary during the year.

Babu Sures Chandra Banerji, Pandit of the Society, resigned his post, and Babu Sasadhur Banerji was appointed in his place from the 27th May, 1919.

Society's Premises and Property.

The Council revived the question of a new building for the Society and appointed a Building Sub-Committee consisting of Mr. S. W. Kemp, Dr. H. H. Hayden and Dr. W. A. K. Christie. The Sub-Committee having submitted a preliminary report the Council appointed a Building Committee consisting of Dr. H. H. Hayden, The Hon. Justice Sir Asutosh Mukhopadhyaya, Mr. H. A. Crouch, Mr. W. W. K. Page, with the President, Treasurer and Secretary as *ex-officio* members.

The Society has received from the Land Acquisition Collector a notice asking it to submit a claim in connection with the acquirement of a portion of the Society's land under the Land Acquisition Act, and the Council appointed Messrs. Pugh & Co., solicitors, to conduct the proceedings. Messrs. Pugh & Co. have put in a claim for compensation of Rs. 1,84,500.

Indian Museum.

No presentations were made to the Indian Museum.

The Director of the Zoological Survey of India was granted permission to destroy worthless specimens belonging to the Society which, by reason of their bad condition, had ceased to possess any scientific value.

The Hon'ble Justice Sir Asutosh Mukhopadhyaya, Kt., C.S.I., D Sc., F.R.A.S., F.R.S.E., was re-appointed by the Council to represent the Society on the Board of Trustees under the Indian Museum Act X of 1910.

Indian Science Congress.

The Sixth Indian Science Congress was held in Bombay on January 13th, 14th, 15th, 16th, 17th and 18th, 1919, under the presidency of Lieut-Col. Sir Leonard Rogers, Kt., C.I.E., M.D., B.Sc., F.R.C.P., F.R.C.S., F.R.S., F.A.S.B., I.M.S. The meetings were attended by over 400 members, the scientific papers communicated totalling 118. Abstracts of these have been published in our Proceedings, Vol. XV, 1919, pages lxxvii *et seq.*

It was arranged that the Seventh Indian Science Congress should be held at Nagpur on January 12th, 13th, 14th, 15th, 16th and 17th, 1920. His Honour Sir Benjamin Robertson, K.C.S.I., K.C.M.G., C.I.E., LL.D., I.C.S., Chief Commissioner. Central Provinces, consented to be Patron, and Sir P. C. Ray, Kt., C.I.E., D.Sc., Ph.D., F.A.S.B., was appointed President, with Dr. J. L. Simonsen as Honorary Secretary, and Mr. M. Owen of the College of Science, Nagpur, and Mr. V. Bose of Nagpur, as Local Secretaries. Prof. P. S. MacMahon returned to India at the end of the year and took over from Dr. Simonsen the secretarial work in connection with the Congress.

The Government of India has issued orders that selected officers, who can be spared, may be permitted to attend on duty the five meetings of the Indian Science Congress to be held in 1920, 1921, 1922, 1923 and 1924, respectively.

Meetings.

There were no General Meetings of the Society during the months of January and August 1919, owing to a quorum not being present. There was no meeting in the recess month of October 1919.

Deputation.

On an invitation from the First Oriental Congress, Poona, held on the 5th, 6th and 7th November, 1919, the Council appointed the following members to represent the Society :—

Mahamahopadhyaya Haraprasad Shastri, C.I.E., M.A., F.A.S.B. ; Mahamahopadhyaya Satis Chandra Vidyabhusana, M.A., Ph.D., F.A.S.B. ; The Hon Mr. A. Al-ma'mun Suhrawardy, *Iftikharul Millat*, M.A., Ph.D., F.A.S.B., Bar.-at-Law ; and Rakhal Das Banerji, Esq., M.A.

London Agency.

Mr. Bernard Quaritch has continued as the Society's Agent in Europe.

Twenty-two boxes containing the Society's serial publications and *Bibliotheca Indica* for sale and distribution to various societies, etc. on the exchange list have been sent during the year.

Barclay Memorial Medal.

On the recommendation of the Barclay Memorial Medal Special Committee, the Council awarded the medal for 1919 to N. Annandale, Esq., D.Sc., C.M.Z.S., F.L.S., F.A.S.B., Director of the Zoological Survey of India.

Elliott Prize for Scientific Research.

The subject selected for the Elliott Prize for Scientific Research for the year 1919 was Chemistry and the notification appeared in the *Calcutta Gazette* dated 22nd and 29th January, and 5th February, 1919.

The Trustees decided to award the Prize to Dr. Jnandra Chandra Ghosh for the following papers : (1) The Abnormality of strong Electrolytes, Part I. Electrical Conductivity of Aqueous Salt Solutions; (2) The Abnormality of Strong Electrolytes, Part II. The Electrical Conductivity of Non-aqueous Solutions ; (3) The Abnormality of Strong Electrolytes, Part III. The Osmotic Pressure of Salt Solutions and Equilibrium between Electrolytes ; (4) The Electrical Conductivity of Acids and Bases in Aqueous Solutions. In terms of the notification, the award of Rs. 210 will be made to him at the Annual Meeting of the Society on Wednesday, 4th February, 1920.

Finance.

The accounts of the Society for the year ending 31st December, 1919, are shown in the Appendix under the usual heads. Statement No. 21 contains the Balance Sheet of the Society and of the various funds administered by it.

The financial position of the Society shows an improvement, and the credit balance at the close of the year amounts to Rs. 2,00,319-11-9, which is nearly Rupees three thousand five hundred more than that of last year. Out of the credit balance Rs. 1,69,400 belongs to the Permanent Reserve Fund, the working balance—exclusive of funds administered for Government—Rs. 30,919 as against Rs. 28,333 at the end of 1918.

The Society has received the usual grants from the Governments of Bengal and India, including the Arabic and Persian MSS. Fund, which has been renewed for a further period of 5 years from April, 1919. The amounts received were as follows :—

From Government of Bengal—		Rs.	*Vide* Statement
Government Allowance—for publication of papers in Journal ..		2,000	No. 1
Oriental Publication Fund,	No. 1	9,000	,, 8
Do.	No. 2	3,000	,, 9
Bureau of Information	..	1,200	,, 11
Sanskrit MSS. Fund	..	5,600	,, 13
TOTAL	..	20,800	
From Government of India—		Rs.	*Vide* Statement
Arabic and Persian MSS. Fund ..		5,000	No. 14

Statement No. 15 shows the sums invested in Government Promissory Notes, held in deposit by the Bank of Bengal of the face value of Rs. 2,84,300. These comprise Rs. 2,74,200 3½% and Rs. 10,100 4% G.P. Notes. They cost Rs. 2,73,206-3-10, the average purchase price being Rs. 96-1-6. The market price, however, at the time of writing this report is nominally Rs. 60-4-0. We have also in the custody of the Alliance Bank of Simla Ltd., 3½% G.P. Notes of the face value of Rs. 500 belonging to the Barclay Memorial Fund.

Statements Nos. 16, 17 and 19 show how the amounts are temporarily invested out of the current Bank balance.

Statement No. 18 gives an account of the money due to, and due by, the Society from Members, etc.

The Budget for 1919 was estimated at the following figures :—Receipts Rs. 23,953 ; Expenditure Rs. 19,762. The actual Receipts and Expenditure for the year 1919 have been :—Receipts Rs. 25,088-8-6 ; Expenditure Rs. 23,406-10-3. This shows an apparent excess of income over expenditure amounting to Rs. 1,681 ; but a sum of Rs. 3,931 is required to meet expenditure incurred on account of publications issued during the year. Other papers accepted in 1919 for future publication will involve a further sum of Rs. 3,575, but this will not become

payable till 1920. Against this balance there have been two extraordinary items of expenditure amounting to Rs. 107-11-4. (Grain Allowance, Rs. 64-15-6, and Winter clothing, Rs. 42-11-10). Rupees 900 have been added to the Permanent Reserve Fund from the entrance fees received during the year which now stands at Rs 1,69,400.

The Budget Estimate of Receipts and Expenditure for 1920 has been framed as follows :—

	Rs.
Receipts	24,260
Expenditure	23,272

BUDGET ESTIMATE FOR 1920.

Receipts.

	1919. Estimate.	1919. Actuals.	1920. Estimate.
	Rs.	Rs.	Rs.
Members' Subscriptions ..	9,000	8,560	9,000
Subscriptions for the Society's *Journal and Proceedings* and *Memoirs* ..	1,920	1,872	1,920
Sale of Publications ..	1,100	1,538	1,200
Interest on Investment ..	9,233	9,971	9,440
Rent of Room.. ..	600	600	600
Miscellaneous	100	547	100
Government Allowance—for publication of papers in *Journal*	2,000	2,000	2,000
TOTAL ..	23,953	25,088	24,260

Expenditure.

Salaries	5,955	6,470	6,842
Commission	600	631	600
Stationery	100	122	100
Pension	228	224	228
Light and Fans ..	200	187	200
Taxes	1,500	1,495	1,500
Postage	500	550	500
Freight	500	237	300
Contingencies	500	351	400
Books	500	710	600
Binding	500	596	600
Carried over ..	11,083	11,573	11,870

	1919. Estimate. Rs.	1919. Actuals. Rs.	1920. Estimate. Rs.
Brought forward ..	11,083	11,573	11,870
Journal and Proceedings and *Memoirs*	6,650	9,137	9,000
Indexes	400	179	200
Printing (Circulars, etc.) ..	300	537	600
Auditor's fee	150	150	150
Petty Repairs	200	134	100
Insurance	344	344	344
Grain Allowance ..	..	64	264
War Bonus	135	643	154
Winter clothing ..	..	42	90
To Personal Account (Written-off and Miscellaneous)	500	603	500
TOTAL ..	19,762	23,406	23,272

The Council records its grateful thanks to Mr. R. D. Mehta for his untiring zeal as Treasurer during the last five years. He reorganized the whole system of the Society's accounts and introduced a scheme of monthly balance sheets whereby the financial position of the Society's affairs was continuously ascertainable.

Library.

The total number of volumes and parts of magazines added to the Library during the year was 1924, of which 159 were purchased and 1765 were either presented or received in exchange.

The Government of India presented to the Society a rotograph copy of a Sanskrit manuscript of the "Charaka Samhita."

In accordance with the desire of the late Dr. A. F. R. Hoernle, an Honorary Fellow of the Society, Mrs. Hoernle forwarded a copy of the "Pharmacographia Indica" by W. Dymock, in 4 volumes, as a presentation to the Society's library.

Publications.

Eight numbers of the *Journal and Proceedings* (Vol. XIV, 1918, Nos. 8 and 9, and Vol. XV. 1919, Nos. 1–6) were published during the year, containing 758 pages and 10 plates.

Two numbers of the *Memoirs* were published,—Vol. VI, Part 6 and Vol. VII, No. 2, containing a total of 116 pages and 4 plates.

Numismatic Supplement No. XXXII was published in the Society's *Journal and Proceedings*, Vol. XIV, 1918, No. 9, under the editorship of Lieut.-Col. H. Nevill.

The last index published to the *Journal and Proceedings* was for Vol. X, 1914, and although arrangements had been made for the preparation of the indices for Vols. XI–XIII, 1915–17, nothing was received from the compiler. The work of indexing the scientific portions of the *Journal and Proceedings*, Vols. XI–XIII, and the *Memoirs*, Vols. 3 and 5, has now been entrusted to Mr. C. O. Bateman and the MS. Index is ready for press. Arrangements have now been made to index the philological portions of these Vols. of the *Journal and Proceedings* and *Memoirs*.

Exchange of Publications.

During the year the Council accepted three applications for exchange of publications, viz.:—(1) From the Calcutta Mathematical Society—the Society's *Journal and Proceedings* and *Memoirs* for their Bulletin, (2) from K. Universitets—Biblioteket i Lund—the Society's *Journal and Proceedings* and *Memoirs* for the *Arsskrift*, (3) from the Forest Pathologist in charge of the United States Department of Agriculture, Bureau of Plant Industry, Spokane, Washington—the Society's *Journal and Proceedings* and the scientific papers published in the *Memoirs* in exchange for the publications of their laboratory.

The Council also sanctioned an exchange of publications with the Bhandarkar Oriental Research Institute, Poona, from the commencement of the issue of their Journal.

Philology, etc.

"Influence of the five heretical teachers on Jainism and Buddhism" is the title of a paper by Babu Bimala Charan Law in which he indicates the nature of the influence of the five heretical teachers, the elder contemporaries of Buddha on the development of the systems of Hindu Philosophy—Jainism and Buddhism in particular.

The same writer in another paper entitled "A note on Buddha-Ghosa's Commentaries" gives an account of Budha Ghosa, a Brahmin of Gaya, who visited Ceylon early in the 5th Century A.D. and wrote commentaries on most of the canonical Pali works which throw considerable light on the life of their author.

Babu Brindabon Chandra Bhattacharyya contributed a paper on the identification of the Asoka pillar, the Jagat Sinha Stupa and the main shrine found at Sarnath in the light of the Mahipal inscription discovered at Sarnath and the account of the place left by Huien-Tsang.

Mahammad Abdul Aziz contributed a paper which, based on certain facts gleaned from the works of Ptolemy and Arzian, identifies the ancient town of Tagara with modern Nagram.

a village on the Godaveri in the Sironcha Tahsil of the Chanda District in C.P.

"Ancient Hindu Astronomy" is the title of paper in which an attempt has been made by Mr. G. R. Kaye to express in modern mathematical language fundamental principles that were utilised by the old Indian Astronomers. They show the remarkable intellectual standard that was achieved in India over a thousand years ago.

"The Outlines of mediaeval Chattisgarh" is the name of a paper in which Mr. C. W. Wills traces the history of Chattisgarh and gives many interesting particulars thereof which had been gathered by him during his official career as a Settlement Officer.

Lt.-Col. T. W. Haig has contributed a paper which contains an account of the life of the poet Ázarí, who was born at Isfarāyīn in Persia in A.H. 784 = A.D. 1382. The writer's main sources of information are Daulat Shāh's *Tazkiratu'sh-Shu'arā* and Firishta's History of India. The poet was first patronised by Shāh Rukh Sulṭān, Taimūr's third son, who reigned in Khurāsān, but later on, he came to India, and found a patron in Ahmad Shāh Walī. the ninth King of the Bahmanī dynasty, and commenced to compose the epic known as *Bahman Nāma*. He left India in A.H. 836 = A.D. 1432 before it was finished, but continued it till his death at Isfarāyīn in A.H. 866 = A.D. 1461.

Mr. Beveridge has contributed a paper in which the sources of the *Akbar Nāma* are enumerated. He suggests that they should be edited and re-translated, and every endeavour should be made to find out those which have disappeared.

Maulavī Abdul Walī has contributed a paper in which he attempts to prove by citing authorities that the name of the first Emperor of the Mughal dynasty can be spelt and pronounced either as Bābar or Bābur and not as Bābur only as adopted by Mrs. Beveridge in her translation of the Emperor's "Turkish Memoirs."

Anthropology.

No anthropological papers have been published in 1919.

Biology.

The following is a list of the papers published :—

Zoology.

(1) A description of three species of Echiuroids found in brackish waters on the coasts of the Bay of Bengal and the Gulf of Siam, by B. Prashad.

(2) Orthoptera at present known from lime-stone caves in the Malay Peninsula and Burma, by L. Chopard.

(3) Note on the vitality and longevity of silkworm moths during the cold and rainy seasons in Bengal, by Maude L. Cleghorn.

(4) Observations on the intra-uterine embryos of elasmobranchs, by T. Southwell and B. Prashad.

(5) (*a*) The occurrence of *Cypræa nivosa Broderip* in the Mergui Archipelago. (*b*) Two Albino varieties of *Cypræa erosa Linnæus*. (*c*) The occurrence of *Cypræa piriformis Gray* in the Mergui Archipelago. (*d*) The occurrence of *Dolium variegatum* Lamarck at Maskat. By E. Vredenburg.

(6) Note on the taxonomic position of the genus *Camptoceras* and *Lithotis japonica* by N. Annandale and B. Prashad.

Botany.

(1) Notes on the vegetation of Seistan by N. Annandale and H. G. Carter.

(2) Species of parasitic fungi belonging to the genus *Nocardia* by Capt. Froilano de Mello and Dr. J. F. St. Antonio Fernandes.

Geology.

Suggestions concerning the History of the Drainage of Northern India, arising out of a Study of the Siwalik Boulder Conglomerate, by Guy E. Pilgrim, D.Sc., F.G.S.

The possibility of relationship between the *Charnockites* and the *Dharwars*, two different metamorphic facies of a single formation, by E. Vredenburg.

Physical Science.

One physical paper was published during the year, Radiation Pressure: the fallacy in Larmor's Method of Proof, by Elder Barter.

There was one paper on Chemistry,—Interaction of Phosphorus halides and Arsenic and Arsenious Compounds by Nogendra Nath Sen.

Medical Section.

No meetings of this section have been held.

International Catalogue of Scientific Literature.

During the year no volumes of the International Catalogue were received but information regarding the detention of several parcels of books owing to the war and the want of transport space, and a promise of an early despatch, was received from the Central Bureau.

Subscriptions covering the value of all copies of the Catalogue received up to date were collected and despatched to the Central Bureau in London.

Index slips amounting to 255 were despatched during the year; about 150 have still to be received back after examination, and will be despatched in the course of a month or so.

Bureau of Information.

A few questions were answered.

Mahamahopadhyaya Haraprasad Shastri, M.A., C.I.E., F.A.S.B., delivered an address to the Society.

Annual Address, 1919.

LADIES AND GENTLEMEN,

It is now my turn to read my address. The Annual Addresses of the Society may be divided into four distinct classes, namely:—

(1) A glorified paraphrase of the Annual Report in which the work of the Society is magnified, to fill 18 or 20 sheets of foolscap.

(2) The Report of the progress in Science and Literature all over the world within the year under review. The Secretaries keep watch from the beginning of the year over new publications, new theories, new discoveries and new methods of investigation. They write notes and the President edits them with his own notes, remarks, amplifications and modifications. Such addresses were begun by Rājā Rājendra Lāl Mitra in 1885 and improved upon and perfected by Sir Charles Elliot and Sir Alfred Croft.

(3) The third class of addresses deals with a point in which the President is a specialist and in which the general public is anxious to get information. Sir Leonard Rogers' "Kala Ajar" and Dr. Hayden's "Age of Man" are the best specimens of this class of address.

(4) The fourth class gives the history of the progress of Oriental Studies during the President's period of literary activity in India. To this class belongs the late lamented Dr. Rudolf Hoernle's address in 1898. A similar review was given for the first century of the Asiatic Society's existence in 1884. Dr. Hoernle in 1898 simply carried the history forward for fourteen years more. I wish to follow in his footsteps and continue the work begun by him from 1898 to 1919

But before I commence my address it is my duty to acknowledge my deep obligations to Dr. Christie, the General Secretary, to whose untiring activity and sound judgment is due the smooth working of the Society for the year.

The greatest event of the period under review is the

reorganization of the Archæological Department of the Government of India. In the year 1898, the Department was, to say the least of it, in a moribund condition. Successive heartless Finance Ministers applied their shears on this—what they considered—a useless Department, and brought it to the verge of abolition. Lord Curzon came in 1899 and he took an early opportunity to deliver an address in this very historic hall reviewing the attitude of the various Governors-General towards the ancient monuments of India. It was a comprehensive and masterly review. He dwelt on the various acts of Government of India from the earliest days to his time, some to encourage and some to discourage vandalism, which, however, was never put down. One Governor-General, for instance, wanted to sell the marbles of Taj Mahal to replenish the exhausted treasury of the East India Company. Lord Curzon announced his intention to reorganize the Department in such a way that no future administration would be able to interfere with its steady progress. He considered the Department to be most useful as revealing to the present generation the achievements of the past. He also announced his intention not only to put down vandalism with a strong hand but to repair, rebuild and conserve such of the monuments as were considered masterpieces. In the course of a few months, he got the Act for the Preservation of Ancient Monuments passed and reorganised the Department with ample funds at its disposal. But the most important thing that he did was the placing of the Department in the hands of a young gentleman trained in the school of Hellenic Archæology. The appointment evoked hostile criticism both from the Press and the Public as the gentleman, Mr. J. Marshall (now Sir John Marshall), did not know Indian conditions and Indian languages. But the events have justified Lord Curzon's choice. Sir John Marshall really wields a magic wand, by a single touch of which shapeless mounds overgrown with grass and thistle, ruins overgrown with jungles, disclosed palaces, temples, monasteries, nay, whole towns and cities from under the earth. He has the rare gift of imparting the magic power to his disciples and he, by his own activities and those of his disciples, has brought the remains of many old cities, consigned to oblivion for scores of centuries, to light. The excavations undertaken by his Department at Sārnāth. Peshawar, Taxila, Sanchi. Saheth Maheth, Charsada, Besnagar, Mandor, Brāhmanābād, Pāṭaliputra, Rājgir, Bhīta, Besarah Kasia, Madh (near Mathura), Nālanda and many other places have met with extraordinary success. At Sārnath, he discovered the place where Buddha preached his first sermon ; at Peshawar, the casket which contained Buddha's relic and Kaniska's statue ; at Taxila, an Aramaic inscription, proving the occupation of the place in the 6th century B.C. by the Persians ; at Saheth Maheth, a primitive relic-casket

of Pre-Maurya days; at Madh near Mathura, the statues of Kaniska, Mataksama (a Kusana prince), Tiastenes and others; at Parkham, near the same place, the statue of Aj̇ātasatru, the fourth king of the Saisunaga dynasty; at Pāṭaliputra, the ash-funnels which remind us of the hundred-pillared pavilion of the Maurya court; at Besnagar, the dedicatory inscription by a Greek ambassador, of a Garuda Pillar to the temple of Vāsudeva; at Nālanda, the old Bālāditya monastery presided over by Śīlabhadra, where Hiuen-Tsang received his final education.

I saw Nālanda in 1908. It was a shapeless ruin, three stories high, with a footpath running along its base, and a few gigantic figures of Buddha at one end which each passer-by stoned for acquiring magical power. But in 1918, the same footpath was broadened into a broad street lined on one side by a succession of big monasteries and on the other side by a long succession of stūpas surmounted by statues of Bodhisattvas and Tāntrik deities of exquisite beauty and wonderful workmanship. The four-storied monastery, in which Hiuen-Tsang received his education, is still standing, two stories high in places, approached by a broad staircase from the street to the first floor.

These excavations have roused intense interest in the art and architecture of ancient India. But these are not the only work of the Department. It is conserving all monuments of importance wherever found. At Khājurāho, in the very depth of the jungles of Bundelkhund, 85 miles away from the nearest Railway Station, the temples of the Chandella rulers of the tenth century have felt the beneficial influence of the conservation work of this Department. Wherever there have been extensive excavations, Museums have been erected in which the minor antiquities obtained at the site have been properly arranged for a careful and artistic study. The Museums are a very noble work of this Department.

There are Museums at Peshawar, Lahore, Taxila, Delhi, Mathurā, Ajmere, Sārnath, Sahet Mahet, Lucknow, Patna, Nālanda, Bombay, Madras, Calcutta. The success of the Archæological Survey of India has induced the Ruling Chiefs to open such Departments in their States. The most notable among these is the Archæological Department at Mysore under the charge of Mr. Narasimchariar, a deep-read scholar and a first-rate connoisseur of art. His Progress Reports were always a delightful reading. He has now begun to issue bulletins of particular places of antiquarian interest in the same way as the guide books of Sanchi and Taxila. The Nizam's Dominions have recently opened an Archæological Department, the first publication of which set the long-standing controversy about the identity of the Aśoka of the Buddhist scriptures and the Piyadasi of the inscriptions at

rest, and another publication raised a very interesting and important issue, viz. the origin of Indian alphabets, by bringing to light a new alphabet in the Prehistoric Cairns, which is neither Brahmi nor Phoenician. Kashmir and Gwalior have also opened Archæological Departments of their own and are likely to achieve brilliant success in the near future. Kashmir has already done much to explore the ruins in the beautiful valley itself and also in the absolutely unfrequented valley of Ladakh. Mayurbhanj opened a Department and published one volume under their Honorary Officer, Rai Nagendra Nath Vasu Saheb. But the lamented death of the late Maharaja put a stop to all activities of the State in that direction.

The success of the Archæological Museums under the Government have induced other States, Societies and even individuals to have Museums of their own. Jodhpur has a Museum, Jaipur has a Museum, Baroda has a Museum, Kashmir has a Museum, Chhatrapur has a Museum, the Bangīya Sāhitya Pariṣat has a Museum, Vārendra Research Society has a Museum, Dacca has a Museum, and Babu Purān Chānd Nāhar has a Museum. Each Museum has its peculiar feature. Every one of them is rich in local antiquities, and where the place is old, the antiquities in the Museum have a widespread interest.

Another work in which this Department takes interest, is the preparation of lists of places of antiquarian interest within its jurisdiction. These lists have not yet been much availed of by the people. But when they will begin to excavate ruins themselves, the lists would be of great value to them.

The Department has been successful in creating an interest in ancient India all over the world. It has awakened self-consciousness in the people of India, and the Western people have learnt to respect the civilization of India. All these results are due to the heads of this Department and their number can be counted on the fingers,—they are Sir John Marshall himself, Dr. Spooner, and Rai Bahadur Dayā Rām Sahin. The Department have enlisted enthusiasm in Archæology wherever found. It has encouraged Rai Bahadur Gourī Šankar Ojhā and Rai Bahadur Rādhā Kṛṣṇa of Mathurā. Both are doing a good deal to help the cause of explaining ancient India to modern people.

But the work of the Department has, behind it, the deep erudition, extensive versatility, excellent taste and sharp penetration of two great Frenchmen, namely, Prof. Sylvan Levi and Prof. Dr. Foucher. It is their ideas—especially of the latter—that the Department is in a manner diffusing. For years and years he has been roaming in Buddhist countries and ancient Buddhist sites, studying the illustrations in Buddhist manuscripts, looking into and criticising excavations, and directing men who have a taste for these things. The works of

these two Frenchmen have now become classic and, though scholars may not agree with them in all points, they cannot help admiring their patience and their marshalling of facts, widely diffused in space and time. Intimately connected with the Archæological Department. has grown up within these twenty years, activity in Central Asian explorations. The discovery of Bower manuscripts by Lieutenant Bower and their decipherment by our late lamented friend Dr. Hoernle, the recovery of Weber manuscripts, Godfrey manuscripts, Macartney's manuscripts by Afghan treasure-seekers, half of which went to St. Petersburg and the other half to Calcutta, the widespread rumour that there are cities buried in the sands of the deserts of Taklamakan and Gobi which are being exploited by the Afghan treasure-seekers, directed the attention of the scholars of Europe towards Central Asia as a likely field from which much of the ancient history of the East may be derived. Expedition after expedition came from Germany, Russia and France to explore these new fields and, to crown them all, Sir Aurel Stein led two expeditions to Khotan. The description of his journey and exploits reads like a romance. But his greatest achievement is the exploration of the caves of the Thousand Buddhas. Centuries before this, when Turkish rule in Central Asia made it impossible for Buddhist monks to keep possession of these caves, they stored all their sacred things, manuscripts, seals, flags, banners, icons, utensils for worship, for burning incense, etc. into a large cave and walled it up. When the caves came again in the possession of the Chinese, a monk used to come from Pekin and lord it over the desolate caves. Sir Aurel made friends with this monk and learnt from him the secret of the walled-up caves. Both the Chinese monk and Sir Aurel were great admirers of Yuan-Chwang, and this fact enabled Sir Aurel easily to ingratiate himself into the favour of this old monk. He gradually succeeded in inducing him to break down the wall, examine the contents of the cave and, last of all, to part with the hoarded treasure of centuries for a few thousands of the horse-shoe money. They were more than sixty mule-loads. Their despatch to Europe, their distribution to different countries and their study and decipherment engaged the attention of a number of scholars. In a short time they discovered translations of Sanskrit Buddhist works in Khotanese, old Chinese and Toknari written on daphne papers, some of which are more than 1,800 years old. They treated of all subjects—religious, philosophical, medical, astrological and meromantic. Only a very small portion had been deciphered, when the devastating war came in and put a stop to all activities in this direction in Germany and Russia. Professor Sylvan Levi is still pursuing his not-very-smooth course of studies, and the publication of the results of his labour is eagerly awaited by scholars all over the world.

These twenty years are remarkable for the number of Oriental works published. The four vedas with their commentaries were published before this time, some of the Brāhmaṇas were also published. Scholars were satisfied if they could get or publish one Brāhmaṇa of one Veda. Śākhās of the Vedas were very little understood and it is the work of these Śākhās which came in for their share of attention during the years under review. The Kauṣītaki Brāhmaṇa has been published—a work belonging to the Kauṣītaki or Śánkhāyana Śākhā. Works of Maittrāyaṇīya Śākhā, both Saṃhitā and Brāhmaṇa, have been published. The Brāhmaṇa of the Talavakāra Śākhā has been published. The word Talavakāra was (twenty years before) a mystery to Orientalists. But it now appears from an inscription published in the Progress Report of the year before last that Talavakāra and Kauthumi were the two main Sākhās of Sāma Veda, in the same way as the White and the Black were the two main Śākhās of the Yajur Veda. The Talavakāra Upaniṣad is well known, and it is also well known that it belongs to the Sāma Veda. Śaṃkarācāryya in his preface to the Bhāṣya of the Upaniṣad says that it is the eighth chapter of the Brāhmaṇa, but nobody knew which Brāhmaṇa was referred to. It now appears that it was the Talavakāra Brāhmana that was meant. Part of the Kāthaka Samhitā and Kāṭhaka Brāhmaṇa have also been published from manuscripts obtained in Kashmir where the Kaṭha Śākhā still prevails.

The Harvard Series have done an immense service to the republic of letters by publishing a number of books of the highest importance to scholars with notes and the history of its study from ancient times to modern days. Bloomfield's Concordance is very helpful to Vedic students.

The Bibliotheca Buddhica Series brought out a large number of very important but not well-known works of Sanskrit Buddhist literature. Professor Bendall's Śikṣā Samuccaya, Professor Speyer's Avadāna-Śataka, Professor Poussain's Mādhyamaka Vṛitti, Messrs. Kern and Nanjio's Saddharma-Puṇḍarīka are beautiful examples of perfection of the editor's art. Saddharma-Puṇḍarīka from the 5th century downwards appears in Sanskrit prose with Gāthās in mixed Sanskrit. But before that even the prose was written in mixed Sanskrit. This exhibits the hold which the mixed Sanskrit had on the Buddhist mind in centuries preceding and succeeding the Christian Era. Professor Sylvan Levi's Mahāyāna Sūtrālaṃkāra is the only work on the Yogācāra system of Buddhist Philosophy that has appeared in print. It defends Māhāyāna against Hīnayāna, but condemns Sūnyavāda as unsatisfactory. Professor Macodonell and Keith's Vedic Index ranks foremost amongst the auxiliaries of Vedic study, and the Professor's Vedic Grammar is a unique work in so far as as he has done it without Panini's Vaidika Prakriyā. He has evolved the Grammar

from the language itself and is as scientific as his great predecessor, Paṇini.

The Oriental Translation Fund Series under the management of the Royal Asiatic Society of Great Britain and Ireland is keeping up its old and established reputation. During the years under review, the Series has published several translations of importance of which the most notable is that by Mr. Ui, a young Japanese scholar, who has translated from Chinese a system of Vaiśeṣika Sūtras with ten categories instead of six as in Kaṇāda's Sūtras. The original in Sanskrit is lost and it is only known in Chinese translation. The Vaiśeṣika Sūtra with ten categories shows that there were other Sūtras too on the subject, before it assumed the stereotyped form with six categories. Mr. Ui has appended a history of the Nyāya and Vaiśeṣika sūtras to his translation and he has shown that, contrary to the received opinions among the Brāhmaṇas, the Vaiśeṣika Sūtras preceded the Nyāya Sūtras. The materials which he has used for his preface belong to the period of great upheaval of Indian mind in the 6th and 7th centuries before Christ, which upheaval produced the great systems of Buddhist and Jaina religions and what are called the Six Heretical Schools. Much of these early speculations are embodied in the *Añgas* of the Jainas and the early works of the Buddhists.

Coming to India, we find all over the country series of publications issued, some with commercial objects, others for the publication of rare works that will not sell, some with State-aid and some with the aid of wealthy individuals and families. So there are many series. But out of these, two stand prominent—the Mysore Series and the Trivendrum Series. Within these twenty years Mysore Series have published 60 volumes and Trivendrum about the same number of volumes. The most notable works published by the Mysore Series is the Arthaśāstra of Kauṭilya or Cāṇakya, the Prime Minister of Candra Gupta. Hitherto the curiosity to know ancient India used to be satisfied with scraps of quotations given in works of the 1st and 2nd centuries A.D. from the works of Alexander's contemporaries. But here, now we have got a work complete in 6,000 slokas, i.e. in a handy volume of 600 pages, written indeed by a contemporary of Alexander, but a few decades before his invasion ; for the author, Canakya, at the time of Alexander's invasion was Prime Minister of a great empire, and so scarcely could find leisure for writing such a laborious work. Politics is generally a very late development in a country's literature, and Cāṇakya's Arthaśāstra is a work on Politics or Rājavidyā and Cāṇakya is not the first writer. He criticises the opinions of nine or ten of his predecessors—not individuals, but schools. The earliest of these schools thinks that politics simply consists of coercion only. The Asuras belonged to this school of thought and the work is attributed

to their Guru, *Ūšanas.* Then arose a second school which added the encouragement of commerce and industry to coercion. The devas belonged to this school of thought and their work is attributed to Vṛhaspati, their Guru. The third school which added a fair knowledge of logic and philosophy to Rājavidyā were the followers of Manu. Later on, a knowledge of three Vedas was also included in the category of kingly education. Cāṇakya, after recounting all these systems and their differences, declares himself to be in favour of the last school. This shows that politics as a science was developing in India many centuries before Alexander. Pandit Śyāma Śāstri deserves the thanks of all concerned for discovering, editing and translating the work into English.

The Mysore Series has published works even older than this. But one historically most important is a collection of works on the Gotras and Pravaras, i.e. the genealogy of the Brāhmaṇas. It includes works on genealogy by Āśvalāyana, Āpastamba, Baudhāyana and Kātyayāna—all of whom belonged to the later Vedic period. It has traced the growth of the Brāhmaṇa community from the seven or eight Ṛṣis of the Ṛg. Veda to a period when the Gotras rose to the number 4,500. The work has been instrumental in solving the many riddles in the history of India, one of them being the origin of the Suṅgas. They were Brāhmaṇas professing the Sāma Veda.

The Trivandrum Series is published under the able editorship of Paṇḍita Gaṇapati Śāstrī, on whom the title of Mahāmahopādhyāya has been conferred by an appreciative and benign Government, and who is considered as the best person to adorn this time-honoured title. The works published in this Series are very well selected. The editions are executed with very great care, with short and pregnant prefaces which leave out nothing worth knowing. In this Series appeared a short synopsis of all the schools of thought in India written by an ancient writer, whose name however is unknown. It is distinguished from other works of the same nature by its lucid and impartial summary of the four systems of Buddhist philosophy. It has published a commentary of the Amara Koṣa written by a Banerji of Bengal in 1159.

The crowning success of this Series consists in the publication of thirteen very ancient dramas some of which, the editor thinks, belong to the Pre-Mauryan period of Indian history. and he finds quotations from them even in Kauṭilya's Arthaśāstra. The dramas are important not only as ancient pieces of composition, but also as works of art, and as works of imagination. The value of these publications cannot be overrated.

After this comes the Gaekwaḍ Series which has already published many works throwing an immense light on the mediæval period of Indian literature. Its importance consists not in what it has done, but what it promises to do. It pro-

mises to publish a number of Buddhist philosophical works, the Sanskrit originals of which were up to this time considered as lost but which the editors of this Series have unearthed from the ancient Jaina Bhāṇḍāras (or libraries) which are so numerous in the Gaekwad's State and its neighbourhood.

The Kashmir Series has already published numerous works of the Kashmir Śaiva Schools, and is likely to achieve brilliant success under the young and enthusiastic scholar, Pandit Madhu Sūdan Kaul Śāstrī, M.A., M.O.L., who received his initiation in Calcutta.

The Vārendra Research Society's Series have already published some excellent works on Grammar of the Paṇinian School by Buddhist authors and it holds out very great promise.

The Kumbakonam Series, a commercial enterprise, have already published the southern recensions of Rāmāyaṇa and Mahābhārata and numerous works of the Mādhva or Vedantic Vaisnavism.

The Chowkhamba Sanskrit Series under the distinguished guidance of the veteran Paṇḍita Vindyeśvarī Prasād Dube is publishing a large number of rare Sanskrit works in which Benares may be considered as the richest of mines.

Twenty years before this it was hard to get a Jaina work even on loan. But a change has come over the spirit of Jaina scholarship, and the Jaina Pandits are coming forward with series of their own publications.

The old Bombay Sanskrit Series is pursuing its useful career with vigour and enthusiasm, and is keeping up the reputation created by eminent editors like Sir R. G. Bhandarkar, Kielhorn, Peterson and others. Its notes are always useful to professors and students of colleges and schools, and its prefaces display the deep and wide scholarship of their editors. Great care is taken in finding out the real reading and making the editions free from mistakes.

I should be wanting in loyalty to my own Society, if I did not speak of the publications in the *Bibliotheca Indica*. The series is not only keeping up its old reputation but showing signs of renewed vigour. As a Bengal Society it has now diverted its attention more to publication of Bengal Sanskrit works. It has commenced to publish all the sub-commentaries of the great Nyāya work, Tattva-Cintāmaṇi. The sub-commentaries belong mostly to the 16th and 17th centuries of the Christian Era. It is also publishing Uriya and Maithil Smṛti works of the same period. It has done much in the way of publishing original Buddhist works in Sanskrit. It has published, for instance, Saundarānanda, a twin-sister of Buddha Carita of Āśvaghoṣa. It has published the Chatuḥśatikā by Āryadeva with its commentary by Candra Kīrtti, the text belonging to the 2nd and the commentary to the 5th century A.D. The six Nyāya Tracts published in the series all belong from 8th

to the 11th century A.D., and are the precursors of the Bengal and Maithil Schools of Navya Nyāya.

A movement for the conservation of Sanskrit manuscripts was inaugurated by the Government of Lord Lawrence in 1868 and the fund sanctioned by the Government of India was provincialised in 1892. Bengal has collected more than 11,000 manuscripts, published 20 volumes of notices of manuscripts; but the Asiatic Society of Bengal, in whose hands the work is entrusted, stopped all further purchases and further publication of notices of manuscripts in private libraries, until a complete Descriptive Catalogue of their own manuscripts was published. The catalogue has been completed. One small volume of Buddhist manuscripts has been published and the volume on the Vedas is in the Press. Several other volumes are in the course of preparation. In Madras, they have completed their Descriptive Catalogue and are now proceeding with fresh acquisitions and fresh publications. In Bombay, only one volume of the Descriptive Catalogue has been published. But they are going on with acquisitions. Benares issues every year a list, more or less descriptive, of their new acquisitions. But no attempt has yet been made to compile a Descriptive Catalogue of the whole collection. There is some activity in the C.P. But it is neither systematic nor continuous. It is the desire of all concerned that all collections of manuscripts either in private or in public hands should have a Descriptive Catalogue. In Europe, many well-known collections have got their catalogues. But, although the large collection presented by Sir Chandra Shamsher Jung Bahadur Rana to the Bodlein Library, Oxford, has been counted and classified, no descriptive catalogue has yet been published. The small but important collection at the Max Muller memorial has not got yet a catalogue *raisonné*.

The large collection of wonderful manuscripts of all ages in the Durbar Library, Nepal, has been partially described in two volumes of my catalogue of Palm-leaf and selected Paper manuscripts in that Library. Bikaner has a collection of 6,000 manuscripts. But the collection is poorly represented in Rājā Rājendra Lāl's volume on that Library. The Alwar collection has a catalogue. But it requires improvement. The Jodhpur collection has about 3,000. It has only a nominal manuscript list. Bundi with about 1,500 MSS. is similarly situated like Jodhpur. The most interesting of Indian collection of manuscripts is at Jaysalmir, where the Guzerat Jaina monks fled with their manuscripts when their country was conquered by Alauddin's general about 1300 A.D. Buhler saw something of this collection in 1878. But since then it has neither been examined nor catalogued. The Kashmir collection has a catalogue made by Sir Aurel Stein. But I have reason to think that a search in the private libraries in Kashmir is likely to yield important results.

When I am on the subject of catalogues, I think the services of two eminent scholars should be prominently mentioned; one is Dr. Beckh of Berlin and the other is P. Cordieré of the Medical Service in France. The former has given us a catalogue of the Kangyur collection of the Tibetan translation of Sanskrit works said to have directly emanated from Buddha himself. The second has given us a catalogue of the Tangyur, i.e. the non-canonical works, in Tibetan translation from Sanskrit, from Bundle 79 to the end, nay even more, it includes the new addition made to the Tangyur since the collection was completed in the 13th century. Seventy-eight bundles of these translations remain yet to be catalogued. The Tangyur collection, especially the Tantric Section of it, is of immense use to those who are engaged in the study of the history of Eastern India in all its bearings. From these catalogues we come to know how active the people of Bengal and Behar were, for four centuries before the Muhammadan conquest, in propagating Buddhist religion in Trans-Himalayan regions; and how they learnt Tibetan and not only helped Tibetan scholars but also themselves translated many Sanskrit and Bengali works into Tibetan. The chief centre of activity of the Tibetans was a great Vihāra in Bengal, named Jagaddala Vihāra. But unfortunately the place has not yet been identified. Scholars hold widely different views with regard to its identification. The chief Bengali scholars whose names are prominent in the matter of translation are Vibhūticandra and Dānaśīla, both belonging to the same Mahāvihāra. Vibhūticandra was not only a translator in Tibetan but a Sanskrit writer of great repute. A manuscript written for him is now deposited in the Cambridge Collection. Professor Bendall attributes it to the 14th century. He did not know who Bibhūticandra was and he could not read the word Jagaddala properly. He read it as Jagandal, and in his time Jagaddala as a Mahāvihāra and as a centre of Tibetan activity was unknown.

Dr. Hoernle in his memorable address of 1898 characterised the discovery of living Buddhism in the shape of Dharma worship in the Burdwan Division as a caricature of Buddhism. It was indeed a caricature, but still it was Buddhism. That discovery opened a wide vista for further researches and during the last twenty years it has been followed up by a number of scholars, with the result that entire sects, now passing for Hindus, have been proved to be Buddhists. Many castes still retain ancient Buddhist customs and worship. In fact, Buddhism is still influencing Bengali society in a manner that cannot be ignored.

During these twenty years I went to Nepal thrice and spent four months of my time there. Professor Sylvan Levi spent there a month and Professor Bendall a month. The result of these explorations is embodied in the two volumes of my Nepal catalogue, in the first of which is appended a history of Nepal

and the surrounding countries from the pen of Professor Bendall. These expeditions have enabled Professoor Sylvan Levi to publish the Mahāyāna Sūtrālaṃkāra with a French translation, Professor Bendall to publish the Subhaṣita-Saṃgraha and me to publish the Rāmacarita, the only historical work relating to Eastern India yet known. The Paiśācī original of the Vṛhat-Kathā is an anxious object of search by every enthusiastic scholar. The search has not succeeded. But I found 4,000 verses of an ancient Sanskrit version and Professor Levi found another 4,000 of the same version. He entrusted both these sections to one of his pupils to edit, and the edition has been published.

The late Rai Bahadur Śarat Candra Dās's Tibetan-English Dictionary has been published. But its Sanskrit, Tibetan and English appendix has not yet been published. For some time it was entrusted to Professor Poussain. But for want of time he had to make it over to a Swiss scholar, and there is no information what progress it has made.

Sir George Grierson wrote to the Government of Lord Curzon in 1905 for the collection and preservation of the manuscripts of Bardic works in Rajputana. Rajputana has several Bardic castes whose sole occupation is to praise different sections of the community in verse and thereby make their living. A great part of these verses lives in oral tradition and a very small part of it is ever committed to writing. Lord Curzon entrusted the work of giving a Preliminary Report as to how the search should be conducted to the Asiatic Society of Bengal; and the Society, after negotiating with several scholars in Calcutta and in Rajputana, at last entrusted it to me on my retirement from Government Service in 1909; and I made several trips to Rajputana and submitted a Preliminary Report. The Report was heartily approved by Sir George Grierson. In it, I proposed that Bardic scholars should be made to edit these works either from manuscripts or from the mouth of their compatriots. At this time Dr Grierson sent a young Italian gentleman to learn this business in India and he induced the Government of India to make a grant, himself undertaking to do all Bardic work in Rajputana with such pecuniary assistance as the States could give. He published one Bardic work and a few annual reports; but his career was cut short by death. Sir G. Grierson had a very good opinion of his linguistic attainments, and the passing away of a young man of so much promise is a matter of profound regret. It is to be hoped that the Government of India will continue the good work in which Sir G. Grierson and the Government of Lord Curzon took so much interest and for which both Mr. Tessitory and myself worked for many years, and in which the whole of Rajputana is so keenly concerned. In the meantime several scholars in Rajputana have published or are about to publish Bardic works

of great importance, and Rai Bahadur Gaurī Šaṅkar Ojhā has done a glorious service to the princes and people of Rajputana by publishing a history of the Sirohis and Solankis, utilizing the Bardic sources and checking them with more reliable sources like inscriptions, coins, etc. He has proposed to write a history of the Rahtores too. Mr. Har Bilas Sarda has written two works on two of the most famous Ranas of Chitore, viz. Kumbha and Sanga, following faithfully in the footsteps of his illustrious townsman, the Oj̣hā. He writes in English, the Ojha in Hindi.

One of the greatest literary achievements of this period is the Linguistic Survey of India. Dr. Grierson took an interest in Indian dialects the moment he set foot on India as a young civilian in the early eighties. He began with Behar dialects seven in number and then with the Maithil language and its literature. He not only works himself, but makes others work with him, for him and against him. The Linguistic Survey is his own idea and an appreciative Government gave him every facility to pursue the bent of his own mind. His great discovery was a double migration of Aryans in India, one of which rolled from the Indus to the Bay of Bengal and the other from the western vicinity of Lahore to the Province of Oudh. He found greater affinity between the dialects of Bengal and the Western Punjab than between Bengal and Agra. His Linguistic Survey is a masterly work in which he has made translations of the same parable into different district, subdivisional and even tribal and clan languages. He has made wonderful discoveries of small migrations from foreign lands and even from Province to Province. One instance will suffice. He has found a Guzerat dialect prevailing among certain tribes in the district of Midnapore, and he has given the history of the migration.

The Asiatic Society of Bengal was founded in 1784 by Sir William Jones with the motto "that its scope is intended to include all that is created in nature and done by man within the geographical limits of Asia." It was the parent of all Societies for Oriental Study in the world. The Bombay Society was in a manner its branch. The Madras Society also was in the same category. But in the year 1828 when the retired members of the Asiatic Society of Bengal founded the Royal Asiatic Society of Great Britain and Ireland, the other societies affiliated themselves to that society as its branches. Since then all new Societies have affiliated themselves to that Society and the parent Society leads a vigorous but solitary existence. Within the last twenty years societies for Oriental Research have sprung up almost in every province and in every important city, some with wide and some with local aims. But the parent society blesses them all and is always willing and able to extend a helping hand to them. The Historical Societies of the

Punjab and U.P. and the Research Society of Bihar and Orissa are among the new accessions of strength to the cause of Oriental studies. The Punjab Society holding its sittings in Simla where they get eminent men like Sir John Marshall to read papers in it, have an advantage over them all. But the Bihar and Orissa Research Society under the Presidentship of Sir Edward Gait has within the last five or six years done an immense amount of original work outside official circles. Sir Edward seeks independent research not dominated either by officialism or partizanship, and some of the Society's contributions have attracted the attention of the whole body of oriental scholars. The journals are appearing punctually to time, first under the editorship of Babu Sarat Chandra Roy and then under that of the distinguished scholar, Mr. K. P. Jayaswal, M.A. (Oxon), Barrister-at-Law. Mr. Jayaswal is himself an enthusiastic contributor, and has devoted himself to the elucidation of the history of the Mauryan and Sisunaga periods. His paper on the Saiśuaga Statues in the Calcutta Museum contains much that is bold and original, and it has taken all Indologists by surprise.

Of the local associations, the first to be named is the Bangiya Sāhitya Pariṣad, which was established in the Bengali year 1300 and under its enthusiastic Secretary, the late lamented Babu Rāmendra Sundar Trivedī, has made wonderful progress and established its branches almost in every district town of Bengal and beyond it—at Patna, Benares, Delhi, Meerut and other places. Some do not want to be branches, such as, the Dacca Sāhitya Pariṣad and the Vārendra Research Society, which are however doing excellent work in their own way—the latter with a wider aim not confined to Bengali literature. Other provinces have imitated Bengal and have established Sāhitya Pariṣads. There are the Hindi Sāhitya Pariṣad, Guzrati Sāhitya Pariṣad, Marhatti Sāhitya Pariṣad, and so on. The Nāgarī Pracāriṇī Sabhā of Benares is an older society and it is doing good work too.

I need not detain you, gentlemen, with a description of the widely well-known Journals of the Royal Asiatic Society of Great Britain and Ireland and its branches, the Epigraphia Indica, the Indian Antiquary, the Journal of the American Oriental Society, the Journal Asiatique of France, and so on.

The net result of this all-pervading, immense, intense and enthusiastic activity is the elucidation of Indian history and along with it the history of the East. Sixty years ago the regular history of India beyond the Mahomedan conquest was shrouded in darkness. Gradually bright patches of real history of former centuries began to attract the attention of scholars and the patches gradually increased and multiplied by the study of coins, inscriptions and such historical

works as were available. Putting together these pieces of information, people began to write articles in the Journals of learned Societies, throwing light on particular dynasties or particular places at particular times. Such articles again increased and multiplied till in 1895, when I ventured to give, for the first time, a connected history of the Hindu Period in one of my educational publications. My efforts were greatly improved upon by Dr. Hoernle in his Presidential Address of 1898. In a few years came out Vincent Smith's classical work on the ancient history of India. He is keeping a strict watch over the doings of all Oriental Societies and in every edition he gives fuller and fuller information. Some people thought that in his third edition issued in 1915 the last word on Indian history has been said. But thanks to Mr. Pargiter, he has pushed that history back by 1,050 years, and is now diving into the Vedas to bring out dynasties even more ancient than those of the Kaliyuga.

Forty years ago people thought that India was never united under one ruler. But the Aśoka inscriptions, found all over India, prove that their position was not tenable. Even then people would not go beyond Aśoka. But Mr. Jayaswal's Nandivardhana about 200 years before was supposed to have been a universal ruler of Northern India, having sent away the Persians from the Punjab. Before him Udayana aimed at universal monarchy in India. But if we go deep into the Vedic Brāhmaṇas, we find that even old Vedic Aryans aimed at universal monarchy. In those days they had no geography, they had no maps. They had to express the extent of their territory in their own peculiar language—by the number of Aśvamedhas, which a king performed. They let loose a horse for a year and the territory over which it roamed unresisted was subject to the owner of the horse. One horse sacrifice meant a certain amount of territory. Old Bharata, son of Duṣyanta and Śakuntalā, who has given his name to the whole country, south of the Himalayas, and whose name is the proud heritage of all Indians, performed 133 such horse sacrifices, seventy-eight to the west of Jumna and fifty-five to the east of the Ganges; we can well see why his name is associated with the continent of India. You may call it over-running and not conquest but the aim is universal and irresistible dominion. The exact extent of this over-running cannot now be estimated, and the period of over-running cannot now be determined. But one thing is certain, it extended from the Indus to Bhāgalpur, for in the list of the performance of horse sacrifices, Aṅga is the easternmost country.

If this intense enthusiasm continues, orientalists will be undoubtedly able in the near future to construct not only a synthetical history of India with its varied races, creeds, civilization and culture, but also to give a connected history

of every branch of Sanskrit literature, every item of Hindu culture, and every variety of Indian Arts and Sciences. There is no reason why the enthusiasm should abate. Oriental study is one of the great platforms in which east and west meet with mutual admiration and mutual sympathy. The east is proud of the results of the oriental studies, because they belong to the east; the west is proud because they have given a new significance to these studies, and their results. The west is grateful to the east for revealing a great civilization that has passed away and in which they find so much to study and to reflect, and the east is grateful that they have got a new light from their old things. I wish this enthusiasm to last long and bring about the desired end.

The President announced the election of Officers and Members of Council for the year 1920 to be as follows:—

President.

Mahamahopadhyaya Haraprasad Shastri, C.I.E., M.A., F.A.S.B.

Vice-Presidents.

The Hon. Justice Sir Asutosh Mukhopadhyaya, Kt., C.S.I., D.L., D.Sc., F.R.S.E., F.R.A.S., F.A.S.B.
The Hon. Mr. F. J. Monahan, I.C.S.
Lieut.-Col. W. D. Sutherland, C.I.E., M.D., F.A.S.B., I.M.S.
G C. Simpson, Esq., D.Sc., F.R.S., F.A.S.B.

Secretaries and Treasurer:

General Secretary:—W. A. K. Christie, Esq., B.Sc., Ph.D., F.A.S.B.
Treasurer:—D. R. Bhandarkar, Esq.. M.A., F.A.S.B.
Philological Secretary:—The Hon. Dr. A. Suhrawardy, Iftikharul Millat, M.A., F.A.S.B. (Bar.-at-Law).
Joint Philological Secretary:—Mahamahopadhyaya Satis Chandra Vidyabhusana, M.A., Ph.D., F.A.S.B.
Natural History Secretaries:— Biology:—Major R. B. Seymour Sewell, F.A.S.B., I.M.S. Physical Science:—S. K. Banerji, Esq., D.Sc.
Anthropological Secretary:—N. Annandale, Esq., D.Sc., C.M.Z.S., F.L.S., F.A.S.B.
Medical Secretary:—Lieut.-Col. D. McCay, M.D., F.R.C.P., F.A.S.B., I.M.S.

Honorary Librarian:—The Hon. Justice Sir Asutosh Mukhopadhyaya, Kt., C.S.I., D.L., D.Sc., F.R.S.E., F.R.A.S., F.A.S.B.

Other Members of the Council.

A. H. Harley, Esq., M.A.
P. J. Brühl, Esq., I.S.O., D.Sc., F.C.S., F.G.S., F.A.S.B.
The Hon. Mr. J. G. Cumming, C.S.I., C.I.E., I.C.S.
E. Vredenburg, Esq., B.L., B.Sc., A.R.S.M., A.R.C.S., F.G.S., F.A.S.B.
Aga Muhammad Kazim Shirazi.
Upendra Nath Brahmachari, Esq., M.A., M.D.

The President announced that the Council resolved on 17th December, 1919, that no election of Fellows would take place during 1919.

The meeting was then resolved into the Ordinary General Meeting.

LIST OF MEMBERS

OF THE

ASIATIC SOCIETY OF BENGAL

CORRECTED UP TO 15TH JUNE, 1920.

LIST OF OFFICERS AND MEMBERS OF COUNCIL OF THE ASIATIC SOCIETY OF BENGAL FOR THE YEAR 1919.

President.

Mahāmahopādhyāya Haraprasād Shāstri, C.I.E., M.A., F.A.S.B.

Vice-Presidents.

The Hon'ble Justice Sir Āsutosh Mukhopādhyāya, Kt., C.S.I., D.L., D.Sc., F.R.S.E., F.A.S.B.
The Hon'ble Mr. F. J. Monahan, I.C.S.
Lieut.-Col. W. D. Sutherland, M.D., F.A.S.B., I.M.S.
G. C. Simpson, Esq., D.Sc., F.R.S., F.A.S.B.

Secretary and Treasurer.

General Secretary :—W. A. K. Christie, Esq., B.Sc., Ph.D., F.A.S.B.
Treasurer :—R. D. Mehta, Esq., C.I.E.

Additional Secretaries.

Philological Secretary :—The Hon. Dr. Abdulla Al-Ma'mūn Suhrawardy, Iftikhārul Millat, M.A., Ph.D., F.A.S.B.

Natural History Secretaries.
- Biology :—S. W. Kemp, Esq., B.A., F.A.S.B., succeeded by F. H. Gravely, Esq., D.Sc., F.A.S.B.
- Physical Science :—Sir P. C. Ray, Kt., C.I.E., D.Sc., Ph.D., F.A.S.B.

Anthropological Secretary :—N. Annandale, Esq., D.Sc., C.M.Z.S., F.L.S., F.A.S.B.
Joint Philological Secretary :—Mahāmahopādhyāya Satis Chandra Vidyābhūsana, M.A., Ph.D., F.A.S.B.
Medical Secretary :—Lieut.-Col. D. McCay, M.D., F.A.S.B., I.M.S.
Honorary Librarian :—The Hon. Justice Sir Āsutosh Mukhopādhyāya, Kt., C.S.I., D.L., D.Sc., F.R.S.E., F.R.A.S., F.A.S.B.

Other Members of Council.

A. H. Harley, Esq., M.A.
H. G. Graves, Esq., A.R.S.M.
G. H. Tipper, Esq., M.A., F.G.S., F.A.S.B.
P. J. Brühl, Esq., I.S.O., D.Sc., F.C.S., F.G.S., F.A.S.B.
D. R. Bhandārkar, Esq., M.A., F.A.S.B.
The Hon. Mr. J. G. Cumming, C.S.I., C.I.E., I.C.S.
Major C. L. Peart, C.I.E.

LIST OF ORDINARY MEMBERS.

R.=Resident. N.R.=Non-Resident. A.=Absent. L.M.=Life Member
F.M.=Foreign Member.

An Asterisk is prefixed to the names of the Fellows of the Society.

N.B.—Members who have changed their residence since the list was drawn up are requested to give intimation of such a change to the Honorary General Secretary, in order that the necessary alteration may be made in the subsequent edition. Errors or omissions in the following list should also be communicated to the Honorary General Secretary.

Members who are about to leave India and do not intend to return are particularly requested to notify to the Honorary General Secretary whether it is their desire to continue Members of the Society; otherwise, in accordance with Rule 40 of the rules, their names will be removed from the list at the expiration of three years from the time of their leaving India.

Date of Election.		
1919 Feb. 5.	N.R.	Abdul Kader Surfraz. *Elphinstone College, Bombay.*
1909 Mar. 3.	R.	Abdul Latif, Khan Bahadur, Syed, Under-Secretary, Government of Bengal, Revenue Dept. *Calcutta.*
1894 Sept. 27.	L.M.	Abdul Wali, Khan Sahib. 3, *Alimuddin Street, Calcutta.*
1915 Feb. 3.	N.R.	Ahmad Ali Khan, Hafiz, Superintendent, Rampur State Library. *Rampur.*
1903 Oct. 28.	A.	Allan, Alexander Smith. M.B. *Europe.* (*c/o Messrs. Smith Stanistreet & Co.*)
1919 July 2.	R.	Amin-ul-Islam, Khan Bahadur, The Hon. Nawabzada, B.L., *Inspector General of Registration, Bengal.*
1893 Aug. 31.	A.	Anderson, Lieut.-Col. Adam Rivers Steele, B.A., M.B., D.P.H., C.M.Z.S., I.M.S. *Europe.* (*c/o India Office*).
1912 July 3.	N.R.	Andrews, Egbert Arthur, B.A. *Tooklai Experimental Station, Cinnenara P.O., Jorhat, Assam.*
1916 Feb. 2.	A.	Andrews, William Edgar. B.A. (Oxon). *Europe.* (*c/o La Martinière.*)
1904 Sept. 28.	R.	*Annandale, Nelson, D.Sc., C.M.Z.S., F.L.S., F.A.S.B., Director, Zoological Survey of India. *Calcutta.*

Date of Election.		
1911 May 3.	R.	Atkinson, Albert Charles. *La Martinière*, 11, *Loudon Street, Calcutta.*
1904 July 6.	N.R.	Aulad Hasan, Khan Bahadur, Sayid, *Dacca.*
1917 April 4.	N.R.	Awati, P. R., M.A., Medical Entomologist, Central Research Institute. *Kasauli.*
1914 Mar. 4.	L.M.	Bacot, I. 31, *Quai d'Orsay, Paris.*
1870 Feb. 2.	L.M.	Baden-Powell, Baden Henry, M.A., C.I.E. *Ferlys Lodge*, 29, *Banbury Road, Oxford, England.*
1919 April 2.	R.	Bal, Surendra Nath. *Calcutta University, Calcutta.*
1918 April 3	N.R.	Ballabhdas, Dewan Bahadur, Banker and Zeminder. *Jubbulpur.*
1920 Mar. 3.	R.	Ballardie, J. H. de Caynoth. 1/1 *Vansittart Row, Calcutta.*
1905 Mar. 1.	R.	Banerji, Muralidhar. *Sanskrit College, Calcutta.*
1918 Feb. 6.	N.R.	Banerji, Narendra Nath, Supdt. of Telegraphs. *Nagpur.*
1919 July 2.	R.	Banerji, Pramathanath, M.A., D.Sc. *Calcutta University, Calcutta.*
1907 Jan. 2.	N.R.	Banerji, Rakhal Das, M.A., Supdt., Archaeological Survey, Western Circle. *Poona.*
1918 Dec. 4.	R.	Banerji, Sudhangsu Kumar, Ghose Prof. of Applied Mathematics, Calcutta University. *Calcutta.*
1885 Nov. 4.	R.	Barman, Damodar Das. 55, *Clive Street, Calcutta.*
1898 Mar. 2	N.R.	Barnes, Herbert Charles, M.A., I.C.S., Deputy Commissioner, Naga Hills. *Kohima, Assam.*
1916 Sept. 27.	A.	Basdekas, Rev. Hilarion. *Europe.* (*c/o Curate of the Greek Church, Calcutta.*)
1909 July 7.	N.R.	Bazuz, Rangnath Khunraj. *Girgaon, Bombay.*
1895 July 3.	L.M.	Beatson-Bell, The Hon. Sir Nicholas Dodd, B.A., C.I.E., I.C.S., Chief Commissioner of Assam. *Shillong.*
1907 Feb. 6.	N.R.	Bell, Charles Alfred, C.M.G., I.C.S. *The Elms, Darjeeling.*
1915 April 7.	N.R.	Belvalkar, Sripad Krishna, M.A., Ph.D., Prof. of Sanskrit, Deccan College. *Poona.*
1909 April 7.	R.	Bentley, Charles A., M.B., D.P.H. *Writers' Building, Calcutta.*

Date of Election.		
1876 Nov. 15.	F.M.	*Beveridge, Henry, F.A.S.B., I.C.S. (retired). *Pitfold, Shottermill, Haslemere, Surrey, England.*
1917 Aug. 1.	R.	*Bhandarkar. Devadatta Ramkrishna, M.A. 16, *Lansdowne Road, Calcutta.*
1908 Nov. 4.	R.	Bhattacharji. Bisvesvar. 22, *Vidyasagar Street, Calcutta.*
1909 July 7.	R.	Bhattacharji, Shib Nath, M.B. 80, *Shambazar Street, Calcutta.*
1893 Feb. 1.	L.M.	Bodding. Revd. P. O. *Dumka, Sonthal Parganas.*
1912 July 3.	N.R.	Bomford, Capt. Trevor Lawrence, I.M.S., M.B., B.S., M.R.C.S., L.R.C.P. *c/o Rev. T. Bomford, C.M.S. House, Peshawar.*
1898 Feb. 2.	R.	Bose, Amrita Lal. Dramatist. 9-2, *Ram Chandra Maitra's Lane, Calcutta.*
1918 July 3	R.	Bose, Charu Chandra, Asst. Surgeon, Medical College. 52/2. *Mirzapur St., Calcutta.*
1895 Mar. 6.	A.	*Bose, Sir Jagadis Chandra, Kt., C.S.I., M.A., D.Sc., C.I.E., F.A.S.B. *Europe.* (*c/o Presidency College, Calcutta.*)
1917 Oct. 3.	R.	Bose, Satyendra Nath, M.Sc. *University College of Science, Calcutta.*
1910 July 6.	N.R.	Botham. Arthur William, I.C.S. *Shillong.*
1911 Nov. 1.	A.	Boyle. Lieut. Cecil Alexander, 11th King Edward's Lancers. *Europe.* (*c/o India Office.*)
1908 Jan. 1.	R.	Brahmachari, Upendra Nath, M.A., Ph.D., M.D. 82/3, *Cornwallis Street, Calcutta.*
1906 July 4.	R.	Brown. Lieut.-Col. Edwin Harold, M.D., I.M.S. (retired). 4, *Harrington Street, Calcutta.*
1907 July 3.	N.R.	*Brown. John Coggin, F.G.S., M.Sc., F.C.S., Assistant Superintendent, Geological Survey of India. (*c/o Geological Survey of India, Calcutta.*)
1909 Oct. 6.	A.	Brown, Percy, A.R.C.A. *Europe.* (*c/o Government School of Art, Calcutta.*)
1909 Oct. 6.	R.	*Brühl. Paul Johannes. I.S.O., D.Sc., F.C.S., F.G.S., F.A.S.B. 35, *Ballygunge Circular Road, Calcutta.*)
1901 June 5.	F.M.	*Burkill, Isaac Henry, M.A., F.A.S.B. *Botanical Gardens, Singapur.*
1896 Jan. 8.	N.R.	*Burn. The Hon. Mr. Richard. C.I.E., I.C.S., F.A.S B., Commissioner. *Benares.*
1900 May 2.	F.M.	Butcher, Flora, M.D. *Overseas Club, General Buildings, Aldwych, London.*

Date of Election.		
1913 Apl. 2.	R.	Calder, Charles Cumming. *Royal Botanic Gardens, Sibpur, Howrah.*
1901 Mar. 6.	N.R.	Campbell. William Edgar Marmaduke, I.C.S. *Aligarh.*
1918 June 5.	N.R.	Campbell, Major W. L., I.A., Political Officer in Sikkim. *The Residency, Gangtok, Sikkim.*
1918 July 3.	R.	Campos. Joachim Joseph, M.B. 16 2. *Royd Street. Calcutta.*
1912 Mar. 6.	A.	Carmichael, The Right Hon'ble Thomas David, Baron of Skirling, G.C.I.E., K.C.M.G. *Europe.* (*c/o India Office.*)
1915 Jany. 6.	R.	Carter. Humphry G., M.B., ch.B. Economic Botanist to the Botanical Survey. Indian Museum. 27, *Chowringhee Road, Calcutta.*
1909 Mar. 3.	R.	Chakravarti, Nilmani, M.A. *Presidency College, Calcutta.*
1905 July 5.	N.R.	Chakravarti. Vanamali. *Cotton College, Gauhati.*
1906 Jan. 3.	A.	Chapman, John Alexander. *Europe.* (*c/o Imperial Library, Calcutta.*)
1915 Oct. 27.	N.R.	Chatterjee, The Hon. Mr. Atul Chandra, I.C.S. *Lucknow.*
1908 Feb. 5	R.	Chatterjee, Gopal Chandra, M.B. 1 5, *Premchand Bural Street, Calcutta.*
1911 June 7.	R.	Chatterjee, Karuna Kumar, F.R.C.S. 74, *Dharamtola Street, Calcutta.*
1916 Jan. 5.	R.	Chatterjee, Khagendra Nath, B.A., B.L., Attorney-at-Law. 12, *Madan Mohan Chatterjee Lane, Calcutta.*
1907 Sept. 25.	R.	Chatterjee, Promode Prakas. 8, *Dixon Lane, Calcutta.*
1893 Sept 28.	R.	Chaudhuri, B. L., B.A., D.Sc. (Edin.), F.R.S.E., F.L.S. (Lond.). 120, *Lower Circular Road, Calcutta.*
1914 April 1.	R.	Chaudhuri, Gopal Das. 32, *Beadon Row, Calcutta.*
1907 July 3	A.	*Christie, William Alexander Kynoch, B.Sc., Ph.D., F.A.S.B. *Europe.* (*c o* Messrs. Cox & Co., Charing Cross, London.)
1909 Nov. 3.	N.R.	*Christophers, Major Samuel Richmond M.B., F.A.S.B., I.M S. *Research Laboratory, Kasauli.*
1906 Nov. 7.	N.R.	Clarke, Geoffrey Roth, I.C.S., Director-General, Posts and Telegraphs. *Simla.*
1915 Sep. 1.	R.	Cleghorn, Maude Lina West, F.L.S., F.E.S. 12, *Alipur Road, Calcutta.*

Date of Election.		
1908 Nov. 4.	A.	Cook, Capt. Lewis, I.M.S. *Europe (c/o India Office.)*
1907 July 3.	A.	Cotter, Gerald de Purcell, B.A., F.G.S. *Europe (c o Geological Survey of India.)*
1887 Aug. 25.	R.	Criper, William Risdon, F.C.S., F.I.C., A.R.S.M. *Konnagar, E.I.R.*
1895 July 3.	F.M.	Cumming, Sir John Ghest, K.C.I.E., C.S.I., C.I.E., I.C.S. (retired). *E.I. United, Service Club*, 16, *St. James Square. London.*
1873 Dec. 3.	F.M.	Dames, Mansel Longworth. I.C.S. (retired). *Ventnor, Wodeland Road, Guildford, Surrey, England.*
1918 April 3.	N.R.	Das, Jagannath, Ratnakar, B.A., Private Secy. to Srimati Maharani of Ajodhya. *The Rajsadan, Ajodhya.*
1915 Sep. 1.	R.	Das-Gupta. Hem Chandra, M.A., F.G.S., Prof., Presidency College. *Calcutta.*
1896 Mar. 4.	L.M.	Das-Gupta, Jogendra Nath, B.A. (Oxon), Barrister-at-Law. 38/2, *Lower Circular Road, Calcutta.*
1912 April 3.	N R.	Das, Kasi Nath, Prof., Ravenshawe College. *Cuttack.*
1917 April 4.	R.	Datta, Rasik Lal, D.Sc., Asst. Professor, Calcutta University. 78, *Manicktola St., Calcutta.*
1910 Jan. 5.	R.	David, David A. 55, *Free School St., Calcutta.*
1895 Sept. 19.	N.R	De, Kiran Chandra, B.A., I.C.S., Commissioner. *Chittagong.*
1917 June 6.	R.	Deb, Kumar Harit Krishna, M.A., Zemindar, Sobhabazar Rajbati. *Raja Navakrishna St., Calcutta.*
1904 Sept. 28.	N.R.	De Courcy, William Blennerhasset. *Leddlesdale Estate, Naduwatum P.O.. Nilgiris.*
1906 Dec. 5.	N.R.	Dentith, Arthur William, I.C.S. *Shillong.*
1916 Dec. 6.	R.	Dharmapala, Anagarika, Secretary. Mohabodhi Society. 46, *Baniapooker Lane. Calcutta.*
1910 May 4.	L.M.	Dhavle, The Hon. Mr. Sankara Balaji. I.C.S. *Ranchi.*
1907 Oct. 30.	N.R.	Dixit, Sri Ram, B.A., *Dewan of Banswara, Rajputana.*
1898 Jan. 5.	R.	Dods, William Kane, Agent, Hongkong and Shanghai Banking Corporation. *Calcutta.*

Date of Election.		
1909 Nov. 3.	A.	*Donovan, Lieut.-Col. Charles, M.D., I.M.S., F.A.S.B. *Europe.* (*c/o Medical College, Madras.*)
1902 July 2.	A.	Doxey, Frederick. *Europe.* (*c/o Messrs. Barlow & Co., Calcutta.*)
1909 Aug. 4.	N.R.	Drake-Brockman, Digby Livingstone, I.C.S. *Saharanpur, U.P.*
1917 June 6.	A.	Dunn, T. O. D. *Europe.* (*c/o Education Dept., Bengal.*)
1914 Sept. 2.	R.	Dutt, B. C. 172, *Manicktola Street, Calcutta.*
1920 April 7.	R.	Dutt, Kumar Krishna. 10, *Hastings Street, Calcutta.*
1910 April 6.	A.	Ebden, Capt. F. T. P., 73*rd Carnatic Infantry. Europe.* (*c/o India Office.*)
1910 April 6.	A.	Elmes, Dr. Cecil H. *Europe.*
1911 Nov. 1.	R.	Esch, V. J., Architect. *Victoria Memorial Building, Cathedral Avenue, Maidan, Calcutta.*
1904 Aug. 3.	A.	*Fermor, Lewis Leigh, A.R.S.M., D.Sc., F.G.S., F.A.S.B. *Europe.* (*c/o Geological Survey of India.*)
1916 June 7.	A.	Ferrer, Joseph Orlando. *Europe.*
1906 Oct. 31.	N.R.	Finlow, Robert Steel, Fibre Expert to the Govt. of Assam. *Dacca.*
1907 Mar. 6.	R.	Firminger, The Ven'ble Walter Kelly, M.A., B.D., F.R.G.S., Archdeacon of Calcutta. *St. John's House, Council House Street, Calcutta.*
1910 Sept. 7.	A.	Fortescue, Capt. Archer Irvine, R.A.M.C. *Europe* (*c o Army Dept., Simla.*)
1913 Nov. 5.	R.	Fox, Cyril S., B.Sc., M I.M.M., F.G.S. *Geological Survey of India, Calcutta.*
1910 April 6.	A.	Francis, Lieut. Reginald Frankland, Indian Army. *Europe* (*c/o India Office.*)
1919 April 2.	N.R.	Friel, R., I.C.S. *Jorhat, Assam.*
1903 Mar. 4.	A.	*Gage, Lieut.-Col. Andrew Thomas, M.A., M.B., B.Sc., F.L.S., F.A.S.B. I.M.S. *Europe.* (*c/o Royal Bot .Gardens, Howrah.*)
1893 Jan. 11	N.R.	*Gait, His Honour Sir Edward Albert, K.C.S.I., C.S.I., C.I.E., F.A.S.B. I.C.S., Lieutenant-Governor of Bihar and Orissa. *Ranchi.*
1919 Feb. 5.	A.	Galoostian, V. M. *Europe.* (*Sanger California.*)

Date of Election.		
1919 Nov. 5.	N.R.	Gambhir, J. S. *Shamaldas College, Bhavnagar, Kathiawar.*
1912 Mar. 6.	R.	Ganguli, Manmohan, B.E., District Engineer. *Mirzapur Street, Calcutta.*
1909 Oct. 7.	R.	Ganguli, Ordhendhu Kumar. 12, *Ganguli's Lane, Calcutta.*
1920 Mar. 3.	N.R.	Ganguli, Capt. P., I.M.S. *Rawalpindi.*
1916 May 3.	A.	Geuns, M. van. *Europe.*
1905 July 5.	R.	Ghosh, Amulya Charan. *Vidyabhusana.* 82, *Manicktolla Street, Calcutta.*
1912 Aug. 7.	R.	Ghosh, Atal Behari, M A., B.L. 59, *Sukea Street, Calcutta.*
1918 Feb. 6.	R.	Ghosh. Ekendra Nath. M.D.. M.Sc. Prof. of Biology. Medical College. *Calcutta.*
1918 July 3	R.	Ghosh, Jnanendra Mohan, Bar.-at-Law. 1, *Harington Street, Calcutta.*
1907 Mar. 6.	R.	Ghosh, Prafulla Chundra, M.A. *Presidency College, Calcutta.*
1869 Feb. 3.	N.R.	Ghosh, Pratapa Chandra, B.A. *Vindyachal.*
1920 May 5.	R.	Ghosh, Sukhendro Nath, B.A., B.Sc. 117, *Dharamtollah Street, Calcutta.*
1912 Sept. 4.	R.	Ghosh, Tarapada. 14, *Paddapuker Street, Kidderpur, Calcutta.*
1919 Feb. 5.	N.R.	Ghulam Mohiud-din Sufi. *Normal School, Amraoti.*
1907 Mar. 6.	R.	Goenka. Roormall. 57, *Burtolla Street. Calcutta.*
1909 Jan. 6.	R.	Gourlay, William Robert, C.I.E.. I.C.S. *Govt. House, Calcutta.*
1910 Sept. 7.	N.R.	*Gravely. Frederic Henry, D.Sc., F.A.S.B. *Govt. Central Museum, Madras.*
1905 May 3.	A.	Graves. Henry George, A.R.S.M. *Europe.* (*c/o India Office.*)
1910 Mar. 2.	N.R.	*Greig, Major Edward David Wilson, M.B., F.A.S.B , I.M.S. *Research Institute, Kasauli.*
1900 Dec. 5.	L.M.	Grieve, James Wyndham Alleyne. Deputy Conservator of Forests. *Jalpaiguri.*
1917 June 6.	N.R.	Gupta, Kisorimohan, M.A.. Prof. of History, M.C. College. *Sylhet, Assam.*
1919 Mar. 5.	N.R	Gupta, Siva Prasad. *Satyaupavana, Benares City.*
1915 Aug. 4.	R.	Gurner, C. W., I.C.S. 12. *Store Road, Ballygange, Calcutta.*
1901 Mar. 6.	N.R.	Habibur Rahman Khan, Raees. *Bhikanpur, District Aligarh.*

Date of Election.		
1892 Jan. 6.	F.M.	Haig. Lieut.-Col. T. Wolseley, C.M.G., Indian Army. H. B. M.'s Legation. *Tehran, Persia.*
1907 Aug. 7.	A.	*Haines. Henry Haselfoot, F.C.H., F.L.S., F.A.S.B. *Glen Ashton, Wimborne, Dorset, England.*
1908 June 3.	R.	Hallowes, Kenneth Alexander Knight. B.A., A.R.S.M., F.G.S., Assistant Superintendent, Geological Survey of India. *Calcutta.*
1916 Jan. 5.	N.R.	Hamilton, C. J. *Patna University, Patna.*
1913 May 7.	N.R.	Hankin, E. H., M.A., D.Sc. *Chemical Examiner, Agra.*
1885 Feb. 4.	L.M.	*Haraprasad Shastri, Mahamahopadhyaya, C.I.E., M.A., F.A.S.B. 26, *Pataldanga Street, Calcutta.*
1920 May 5.	R.	Harcourt, Major E. S. *United Service Club, Calcutta.*
1912 May 1.	R.	Harley, A. H., M.A. *The Madrasah, Calcutta.*
1902 Dec. 3.	N.R.	Harnarain Goswami, Shastri. *Hindu College, Delhi.*
1908 April 1	R.	Harrison, Edward Philip, Ph.D., F.R.S.E. *The Observatory, Alipur, Calcutta.*
1897 Feb. 3.	A.	*Hayden. Sir Henry Herbert, Kt., C.I.E., D.Sc., B.A., B.E., B.A.I., F.G.S., F.A.S.B., *Europe.* (*c/o Geological Survey of India*).
1911 June 7.	A.	Hedayat Husain. Shams-ul-Ulama Muhammad. 7-1, *Ramsanker Roy's Lane, Calcutta.*
1919 Nov. 5	N.R.	Hemraj, Raj Guru. *Dhokatol, Nepal.*
1908 June 3.	R.	Heron, Alexander Macmillan, D.Sc., F.G.S., M. Inst. M M. *Geological Survey of India, Calcutta.*
1920 Feb. 4.	N.R.	Hill, H. B. C. *P.O. Chabna.*
1911 April 5.	N.R.	Hiralal, Rai Bahadur, B.A., M.R.A.S, *Damoh, C.P.*
1891 July 1.	N.R.	*Holland. Sir Thomas Henry, K.C.S.I. K.C.I.E., D.Sc. A.R C.S., F.R.S., F.G.S., F.A.S.B., President, Indian Munitions Board. *Simla.*
1908 July 1.	A.	Holmwood, Herbert, I.C.S. (*retired.*) *Europe.* (*c/o India Office.*)
1910 Jan. 5.	A.	Hope, Geoffrey D., B.Sc., Ph.D. *Europe.* (*c/o Indian Tea Association*)
1914 Feb. 4.	R.	Hornell, The Hon. Mr. W. W., Director, Public Instruction, Bengal. *Calcutta.*

Date of Election.		
1873 Jan. 2.	L.M.	Houstoun, George L., F.G.S. *Johnstone Castle, Renfrewshire, Scotland.*
1918 Feb. 6.	R.	Hui, Rev. Sramana Wan. 4, *Tiretta Bazar Street, Calcutta.*
1911 Feb. 1.	R.	Insch, Jas. 101, *Clive Street, Calcutta.*
1904 Jan. 6.	A.	Jackson, Victor Herbert, M.A. *Europe.* (*c o Patna College, Bankipur*).
1916 Jan. 5.	N.R	Jain, Kumar Devendra Prasad, Secy. All-India Jain Association. *Arrah.*
1907 Dec. 4.	A.	James, Henry Rosher, M.A., *Europe.* (*c/o India Office.*)
1907 Sept. 25.	N.R.	Jenkins, Owen Francis, I.C.S. *Badaun.*
1908 June 3.	R.	Jones, Herbert Cecil, A.R.S.M., A.R.C.S., F.G.S. *Assistant Superintendent, Geological Survey of India, Calcutta.*
1911 Sept. 1.	N.R.	Juggarao, Sree Raja Ankitam Venkata. *Zemindar of Shermahamadpuram, Dabagardens, Vizagapatam.*
1911 Nov. 1.	N.R.	Kamaluddin Ahmed, Shams-ul-Ulama. *Madrasah Hill, Chittagong.*
1891 Feb. 4.	N.R.	Kapur, Raja Ban Behari, C.S.I. *Burdwan.*
1911 Jan. 1.	A.	Kaye George Rusby, F.R.A.S. *Europe.* (*c o Bureau of Education, Simla.*)
1918 July 3.	F.M.	Kazunobu, Kanokoge, Prof. of Philosophy, The Keio University. *Europe.* (*c/o Japanese Consulate, 7, Loudon St., Calcutta.*)
1920 Feb. 4.	R.	Keir, W. I., Asst. Architect to the Govt. of Bengal. *Sibpur Engineering College, Howrah.*
1910 May 4.	A.	*Kemp, Dr. Stanley W., B.A., F.A.S.B. *Europe.* (*c o Zoological Survey of India, Calcutta*).
1882 Mar. 1.	A.	Kennedy, Pringle, M.A., B.L. *Europe.*
1906 Aug. 1.	R.	Kennedy, William Willoughby, M.A., M.D., D.P.H., M.R.S.C., L.R.C.P. 9, *Middleton Street, Calcutta.*
1906 Sept. 19.	R.	Kesteven, The Hon. Sir Charles Henry, Kt., Solicitor to Government. 26, *Dalhousie Square, Calcutta.*
1918 April 3.	N.R.	Khanna, Ram Nath, c o Mr. B. Dhani Ram. *Gurgaon.* [*Road, Calcutta.*
1920 Mar. 3.	R.	Khuda Bakhsh, S., Bar.-at-Law. 5, *Elliott*
1909 April 7.	R.	Kilner, John Newport, M.B., L.R.C.S., L.R.C.P. 14, *Garden Reach, Calcutta.*

Date of Election.		
1910 Mar. 2.	R.	Kirkpatrick, W. *Chartered Bank Buildings, Calcutta.*
1920 Mar. 3.	R.	Lahiri, Jagadindranath. 91. *Upper Circular Road, Calcutta.*
1918 Feb. 6.	N.R.	Laiq Ahmad Ansari. Shaikh, Historical Research Office. *Bhopal.*
1887 May 4.	L.M.	Lanman, Charles Rockwell. 9, *Farrar Street, Cambridge. Massachusetts, U.S. America.*
1919 Nov. 5.	R.	Larmour, F. A. 60, *Bentinck Street, Calcutta.*
1889 Mar. 6.	L.M.	*La Touche, Thomas Henry Digges, B.A., F.G.S., F.A.S.B. *Alfriston Hills Road, Cambridge, England.*
1914 Aug. 5.	R.	Law, Bimala Charan, B.A. 24, *Sukea St., Calcutta.*
1911 Feb. 1.	R.	Law, Narendra Nath, M.A., B.L. 96, *Amherst St., Calcutta.*
1914 July 1.	R.	Law, Satya Charan, M.A., B.L. 24, *Sukea St., Calcutta.*
1902 July 2.	N.R.	Leake, Henry Martin, M.A., F.L.S. *Nawabgunj, Cawnpore.*
1918 June 5.	N.R.	Lees, Donald Hector, I.C.S., *Jalpaiguri.*
1911 May 3.	A.	Lomax, C. E., M.A. *Europe.* (*c/o La Martinière, Calcutta.*)
1906 Oct. 31.	N.R.	Luard, Lieut.-Col. Charles Eckford, M.A. (Oxon). Indian Army. *Sehore, C.P.*
1870 April 7.	L.M.	Lyman, B. Smith. 708, *Locust Street, Philadelphia, U.S. America.*
1893 Jan. 11.	L.M.	Maclagan, The Hon. Sir Edward Douglas, M.A., K.C.I.E., C.S.I., I.C.S., Lieutenant-Governor of the Punjab. *Lahore.*
1905 Aug. 2.	A.	*McCay, Lieut.-Col. David, M.D., I.M.S. *Europe.* (*c/o Medical College, Calcutta.*)
1913 Mar. 5.	N.R.	MacMahon, P. S., M.Sc., B.Sc. *Canning College, Lucknow.*
1912 May 1.	R.	McLean, David. *Chowringhee Mansions, Calcutta.*
1893 Jan. 11.	L.M.	Madho Rao Scindia, His Highness Maharajah Colonel Sir, *Alijah Bahadur*, G.C.S.I., G.C.V.O., A.D.C., LL.D., Maharajah of Gwalior. *Jai Bilas, Gwalior.*
1916 June 7.	N.R.	Mahajan, Surya Prasad. *Murarpur, Gaya.*
1920 Mar. 3.	R.	Mahalanobis, Prof. P. C. 210, *Cornwallis Street, Calcutta.*

Date of Election.		
1906 Dec. 5.	R.	Mahalanobis, Subodh Chandra, B.Sc., F.R.S.E., F.R.M.S. 210, *Cornwallis Street, Calcutta.*
1911 Mar. 1.	R.	Mahatap, The Hon. Sir Bijoy Chand, K.C.S.I., Maharajadhiraj of Burdwan. 6, *Alipur Lane, Calcutta.*
1918 Aug. 7.	R.	Maitra. Jatindra Nath. Physician and Surgeon. 68/*a, Beadon St., Calcutta.*
1918 Feb. 6.	N.R.	Maitra, Sisir Kumar. Principal. Indian Institute of Philosophy. *Amalner, Bombay Presidency.*
1920 June 2.	R.	Majumdar, N. G. 70, *Russa Road North, Calcutta.*
1916 Feb. 2.	R.	Majumdar, Narendra Kumar, M.A., Asst. Prof. Calcutta University. *Calcutta.*
1912 Jan. 10.	N.R.	Majumdar, Rai Jadunath. Bahadur. Government Pleader. *Jessore.*
1913 June 4.	R.	Majumdar, Ramesh Chandra, M.A., Ph.D. 16, *Chandranath Chatterji Street. Bhowanipur, Calcutta.*
1918 Feb. 6.	R.	Manen, Johan van, Librarian, Imperial Library. *Calcutta.*
1901 June 5.	N.R.	Mann, Harold Hart, D.Sc., M.Sc., F.L.S., Principal, Agricultural College. *Poona.*
1899 Aug. 30.	N.R.	Mannu Lal, Rai Bahadur, Retired Civil Surgeon. *Rai Bareli.*
1919 Oct. 10.	N.R.	Manry, Rev. J. C. *Ewing Christian College, Allahabad.*
1905 Dec. 6.	F.M.	Marsden, Edmund, B.A., F.R.G.S. 12, *Elerdale Road, Hampstead, London.*
1919 Oct. 29.	N.R.	Marten, The Hon. Mr. John Thomas. *Hotel Cecil, Simla.*
1919 June 4.	N.R.	Matthai George. *Govt. College, Lahore.*
1917 May 2.	A.	Meerwarth, Dr. A. M. *Europe.*
1886 Mar. 3.	L.M.	Mehta. Roostumjee Dhunjibhoy. C.I.E. 9, *Rainey Park, Ballygunge, Calcutta.*
1884 Nov. 5.	N.R.	*Middlemiss, Charles Stewart. B.A., F.G.S., F.A.S.B. *Kashmir, Srinagar.*
1884 Sept. 3.	A.	Miles, William Harry. *Europe.* (*c/o Messrs. J. Mackillican & Co.*)
1912 June 5.	N.R.	Misra, Champaram. *Partabgarh. Oudh*
1911 July 5.	N.R.	Misra, Rai Bahadur Pandit Shyam Behari, B.A., I.C.S., Deputy Collector. *Unao, Oudh.*
1916 Nov. 1.	R.	Mitra, Adar Chandra. B.L. 164, *Bow Street, Calcutta.*
1919 June 4.	R.	Mitra, Dr. Amulya Chandra. Medical Practitioner. *Burdwan.*

Date of Election.		
1906 June 6.	R.	Mitra, Kumar Manmatha Nath. 34, *Shampukur Street, Calcutta.*
1919 April 2.	R.	Mitra, Panchanan. *Bangabasi College, Calcutta.*
1916 Feb. 2.	R.	Mohammad Yusuf, Hashimi, M.A. *The Madrasa, Calcutta.*
1909 May 5.	N.R.	Mohyuddin Ahmad, Abul-Kalam, Azad. *Ranchi.*
1895 July 3.	R.	Monahan, The Hon. Mr. Francis John I.C.S. *Harrington Mansions, Calcutta.*
1906 Dec. 5.	N.R.	More, Major James Carmichael. 51st Sikhs. *Kuwait, Persian Gulf.*
1919 Feb. 5.	R.	Moreno, H. W. B., B.A., Ph.D. 12, *Wellesley Street, Calcutta.*
1908 Dec. 2.	A.	Moses, Capt. Owen St. John, M.D., F.R.C.S., I.M.S. *Europe (c o India Office.)*
1912 Jan. 10.	R.	Muhammad Kazim Shirazi. Aga. 23, *Lower Chitpur Road, Calcutta.*
1909 Mar. 3.	R.	Mukerjee, Brajalal. M.A., Solicitor. 12, *Old Post Office Street, Calcutta.*
1899 Sept. 29.	R.	Mukerjee. Jotindra Nath. B.A., Solicitor. 3, *Old Post Office Street, Calcutta.*
1916 Mar. 1.	R.	Mukerjee, Prabhat Kumar, Bar.-at-Law. 14*a*, *Ramtanoo Bose Lane, Calcutta.*
1898 May 4.	R.	Mukerjee, Sir Rajendra Nath, K.C.I.E. 7, *Harrington Street, Calcutta.*
1894 Aug. 30.	R.	Mukerjee, The Hon. Mr. Sibnarayan. *Uttarpara, Bally.*
1919 Feb. 5.	N.R.	Mukerjee, Taraknath. *Falka Colliery. Nirshachate P.O., Manbhum.*
1886 May 5.	L.M.	*Mukhopadhyaya, The Hon. Justice Sir Āsutosh, Kt., C.S.I., M.A., D.L., D.Sc., F.R.S.E., F.R.A.S., F.A.S.B., Chief Justice of Bengal. 77, *Russa Road, Bhowanipur, Calcutta.*
1908 Feb. 5.	R.	Mukhopadhyaya. Girindra Nath, B.A., M.D. 156. *Haris Mukerjee Road, Bhowanipur, Calcutta.*
1892 Dec. 7.	R.	Mukhopadhyaya. Panchanan. 46. *Bechoo Chatterji's Street, Calcutta.*
1910 Nov. 2.	A.	Murray, William Alfred, B.A. (Cantab), M.B. *Europe (c o Assam-Bengal Railway, Chittagong).*
1906 Mar. 7.	R.	Nahar, Puran Chand, Solicitor. 48, *Indian Mirror Street, Calcutta.*
1920 Feb. 4.	N.R.	Narayan, Brij. *Rose Cottage, Simla.*
1918 Sept. 25.	N.R.	Narayan, Prince Victor N. *Cooch Bihar.*

Date of Election.		
1916 July 5.	R.	Naseer Hosein Khankhayab, Syed. 78, *Prinsep St., Calcutta.*
1914 Feb. 4.	R.	Nawab Ali Chaudhury, The Hon. Nawab Syed. 27, *Weston Street, Calcutta.*
1901 Mar. 6.	N.R.	Nevill, Lieut.-Col. Henry Rivers, I.C.S. *Cranagh, Simla.*
1917 Mar. 7.	A.	Newton, Rev. R. P., M.A. *Europe.*
1889 Aug. 29.	L.M.	Nimmo, John Duncan. *c/o Messrs. Walter Duncan & Co.,* 137, *West George Street, Glasgow.*
1913 July 2	N.R.	Norton, E. L., I.C.S., District Magistrate. *Orient Club Building. Chowpatti, Bombay.*
1916 Feb. 2.	A.	Oka, Rev. R. *Europe.* (*c/o Bangae & Co. Calcutta.*)
1906 Dec. 5.	R.	O'Kinealy, Lieut.-Col. Frederick, M.R.C.S., (Eng.), L.R.C.P. (Lond.). I.M.S. *Presidency General Hospital, Calcutta.*
1915 April 7.	R.	Otani, Count Kozui. (*c/o Consulate-General of Japan, Calcutta.*)
1907 July 3.	R.	Page, William Walter K., Solicitor. *Messrs. Pugh & Co., Calcutta.*
1920 Jan. 7.	N.R.	Parameshara Aiyar, S. *Travancore.*
1904 Aug. 3.	N.R.	Parasnis, Rao Bahadur Dattalraya Balwant. *Satara.*
1919 Nov. 5.	R.	Pascoe, E. H., M.A., D.Sc., F.G.S. *Geological Survey of India, Calcutta.*
1910 April 6.	A	Patuck, Pestonji Sorabji, I.C.S. *Europe.* (*c/o India Office.*)
1906 Dec. 5.	A.	Peart, Major Charles Lubé, C.I.E., 106th Hazara Pioneers. *Europe.* (*c/o Board of Examiners.*)
1888 June 6.	L.M.	Pennell, Aubray Percival, B.A., Bar.-at-Law. *Rangoon.*
1877 Aug. 1.	N.R	Peters, Lieut.-Col. Charles Thomas, M.B., I.M.S. (retired). *Dinajpur.*
1915 May 5.	A.	Philby, H. St. J. B., I.C.S. *Europe* (*c/o Alliance Bank, Calcutta*).
1889 Nov. 6.	L.M.	*Phillott, Lieut.-Colonel Douglas Craven, Ph.D., F.A.S.B. *Indian Army* (*retired*). *The Bury, Felsted, Essex, England.*
1914 Nov. 4.	R.	Pickford, The Hon. Mr. Alfred Donald. 2, *Hare Street, Calcutta.*
1904 June 1.	R.	Pilgrim, Guy E., D.Sc., F.G.S. *Geological Survey of India, Calcutta.*
1910 Aug. 3.	R.	Podamraj Jain, Raniwalla. 9, *Joggomohan Mullick's Lane, Calcutta.*

Date of Election.		
1920 April 7.	N.R.	Pradhan, Hariprasad. *Pradhan Cottage, Darjeeling.* [*Calcutta.*
1918 April 3.	R.	Prashad, Baini, D.Sc. *Indian Museum.*
1914 Mar. 4.	A.	Raffin, Alain. *Europe.* [*pur.*
1880 April 7.	N.R.	Rai, Bepin Chandra. *Giridih, Chota Nag-*
1895 Aug. 29.	N.R.	Rai Chaudhuri, Jatindranath M.A., B.L., Zemindar. *Taki, Jessore.*
1920 Mar. 3	N.R.	Raj, B. Sundara. *Madras.*
1908 Feb. 5.	N.R.	Randle, Herbert Neil, B.A. *Queen's College, Benares.*
1917 June 6.	N.R.	Rangaswami Aiyangar, K. V., Rao Bahadur, Prof. of History and Economics, H.H. The Maharaja's College. *Trivandrum.*
1905 Jan. 4.	N.R.	Rankin, James Thomas, I.C.S., Commissioner. *Dacca.*
1890 Mar. 5.	R.	*Ray, Sir Prafulla Chandra. Kt., D.Sc., F.A.S.B. *University College of Science, Calcutta.*
1917 May 2.	R.	Ray, Kumud Sankar, M.A., B.Sc., M.B., Ch.B (Edin.). 44, *European Asylum Lane, Calcutta.*
1920 Mar. 3.	N.R.	Raye, Narendra Nath. *Bhagalpur.*
1905 May 3.	A.	Richardson. The Hon. Mr. Justice Thomas William, I.C.S. *Europe.*
1918 April 3.	F.M.	Robinson, Herbert C., Director of Museums and Fisheries, Federated Malay States. *Kuala Lumpur.*
1913 Sept. 3.	A.	Rogalsky, P. A. *Europe.* (*c/o Imperial Russian Consulate General, Calcutta.*)
1900 April 4.	A.	*Rogers, Lt.-Col. Sir Leonard. Kt., C.I.E., M.D., B.S., F.R.C.P., F.R.C.S., F.A.S.B., F.R.S., I.M.S. *Europe.* (*c/o Medical College, Calcutta.*)
1920 Mar. 3.	R.	Ronaldshay, The Right Hon. the Earl of, Governor of Bengal. *Calcutta.*
1901 Dec. 4.	F.M.	*Ross, Sir Edward Denison, Kt., C.I.E., Ph.D., F.A.S.B., Director, School of Oriental Studies. *London.*
1918 July 3.	R.	Roy, Dr. Bidhan Chandra, M.D., F.R.C.S., M.R.C.P,, (Lond.), Lecturer, Campbell Medical School. 36, *Wellington St., Calcutta.*
1903 July 1.	L.M.	Roy, Maharaja Jagadindranath, *Bahadur.* 6, *Lansdowne Road, Calcutta.*
1915 Oct. 27.	R.	Roy, Kaviraj Jamini Bhusan, M.A., M.B. 46, *Beadon St., Calcutta.*

Date of Election.		
1910 Sept. 7.	N.R.	Roy, Kumar Sarat Kumar. *Dayarampur, Rajshahi.*
1919 Feb. 5.	R.	Roy, Srijut Sasadhar. 31, *Haris Mukerjee Street, Bhowanipore, Calcutta.*
1917 Oct. 3.	R.	Saha, Meghnad, M.Sc. *University College of Science, Calcutta.*
1916 April 5.	N.R.	Saha, Radha Nath. 16, *Lachmikundu, Benares City.*
1913 Apl. 2.	N.R.	Sahay. Rai Sahib Bhagvati, M.A., B.L., Offg. Inspector of Schools. *Bhagalpur.*
1911 Nov. 1.	N.R.	Sahni, Rai Bahadur Dayaram, M.A., Supdt. of Archæology. *Jammu, Kashmir.*
1919 Sept. 3.	N.R.	Saksena. Debi Prasad. Sub-Dy. Inspector of Schools. *Farrukhabad.*
1916 July 5.	R.	Sarkar, Ganpati. 69, *Baliaghata Main Road, Calcutta.*
1898 Mar. 2.	N.R.	Sarkar, Jadunath. *Ravenshaw College, Cuttack.*
1909 Mar. 3.	R.	Sarvadhikari, Sir Deva Prasad, Kt., C.I.E., M.A., B.L. 2, *Old Post Office Street. Calcutta.*
1911 Jan. 4.	R.	Sarvadhikari, Dr. Suresh Prasad. 79-1, *Amherst St., Calcutta.*
1917 Dec. 5.	R.	Sastri, Ananta Krishna, Pandit. 56 1*a*, *Sri Gopal Mallick Lane, Calcutta.*
1900 Dec. 5.	A.	Schwaiger. Imre George, Expert in Indian Art. *Europe.*
1915 Feb. 3.	A.	Segard, Dr. C. P. *Europe.*
1919 April 2.	.R	Sen, A. C. 80, *Lower Circular Road. Calcutta*
1902 May 7.	R.	Sen, Jogendra Nath. *Vidyaratna*, M.A. 31, *Prasanna Kumar Tagore's Street, Calcutta.*
1914 April 1.	N.R.	Sen-Gupta, Dr. Nares Chandra. *Dacca.*
1897 Dec. 1.	R.	Seth. Mesrovb J. 19, *Lindsay Street, Calcutta.*
1911 July 5.	R.	*Sewell, Major Robert Beresford Seymour, M.R.C.S., L.R.C.P., I.M.S. *Indian Museum, Calcutta.*
1909 Jan. 6.	A.	Shirreff. Alexander Grierson, B.A., I.C.S. *Europe.* (*c/o India Office.*)
1913 Dec. 3.	R.	Shorten. Capt. James Alfred, B.A., M.B., B.Ch., I.M.S. *Medical College, Calcutta.*
1908 Mar. 4.	R.	Shujaat Ali, Nasirul Mamalik Mirza, Khan Bahadur, Acting Consul-General for Persia. 10, *Hungerford Street, Calcutta.*

Date of Election.		
1916 Aug. 2.	N.R.	Shukla, Pandit Ashwani Kumar. B.A., LL.B., Revenue Officer, Mewar State. *Udaipur.*
1902 Feb. 5.	N.R.	Shyam Lal, Lala, M.A., LL.B.. Deputy Collector. *Naimadri, Agra.*
1899 May 3.	N.R.	Silberrad, Charles Arthur, B.A., B.Sc., I.C.S., *Gorakhpur, U.P.*
1913 Mar. 5.	L.M.	*Simonsen, J. L., D.Sc. *Forest Research Institute and College, Dehra Dun.*
1909 April 7.	A.	*Simpson, George Clarke, D.Sc., F.A.S.B. *Europe.* (*c/o Meteorological Dept., Simla.*)
1918 Feb. 6.	N.R.	Singh, Badakaji Marichiman. 38, *Khichapokhari, Katmandu, Nepal.*
1894 July 4.	N.R.	Singh, Raja Kushal Pal, M.A. *Narki*
1912 May 1.	R.	Singh Roy. Rai Lalit Mohan. Bahadur. 15, *Lansdowne Road, Calcutta.*
1893 Mar. 1.	N.R.	Singh, Maharaja Kumara Sirdar Bharat, I.C.S. (retired). *Shankergar, Allahabad.*
1899 Aug. 29.	N.R.	Singh, H.H. The Maharaja Sir Prabhu Narain, Bahadur, G.C.I.E., Maharaja of Benares. *Ramnagar Fort, Benares.*
1909 April 7.	N.R.	Singh, Raja Prithwipal. Talukdar of Surajpur. *District Barabanki, Oudh.*
1899 Nov. 6.	L.M.	Singh, H.H. The Hon. Maharaja Sir Rameshwara, Bhahadur, K.C.I.E. *Durbhanga.*
1913 July 2.	N.R.	Singh, Rudradat, M.A., LL.B.. Vakil. *Lucknow.*
1894 Feb. 7.	N.R.	Singh, H.H. The Maharaja Vishwa Nath, Bahadur. *Chhatturpur, Bundelkhund.*
1918 Feb. 6.	R.	Singha, Kumar Arun Chandra, M.A. 120/3, *Upper Circular Road, Calcutta.*
1918 April 3.	N.R.	Sinha, Raja Bahadur Bhupendra Narayan. B.A. *Nasipur Rajbati, Nasipur P.O.*
1912 Sept. 5.	N.R.	Singhi, Bahadur Singh. *Azimgunj, Murshidabad.*
1898 Aug. 3.	N.R.	Sita Ram. Lala. B.A., Depy. Magistrate. *Allahabad.*
1913 July 2.	N.R.	Sivaprasad, B.A., Offg. Junior Secretary to the Board of Revenue, U.P. *Allahabad.*
1920 June 2.	R.	Skinner, S. A., Engineer and Director. Messrs. Jessop & Co., Ltd. 93, *Clive Street, Calcutta.*
1920 Mar. 3.	N.R.	Smith, P. Bosworth. *Oorgaum P.O.*
1901 Dec. 4.	N.R.	*Spooner, David Brainard, B.A., Ph.D., F.A.S.B. *Simla.*

Date of Election.		
1904 Sept. 28.	N.R.	Stapleton, Henry Ernest, B.A., B.Sc. *Ranna, Dacca.*
1908 Dec. 2.	R.	Steen, Major Hugh Barkley, M.B., I.M.S. 1, *Upper Wood Street, Calcutta.*
1906 Dec. 5.	A.	Stokes, Captain Claude Bayfield. *Europe (c/o India Office.)* [*Calcutta.*
1916 July 5.	R.	Street, W. S. *Messrs. Shaw Wallace & Co.,*
1907 June 5.	R.	*Suhrawardy, The Hon. Dr. Abdullah Al-Ma'mūn, Iftikharul Millat, M.A., D.Litt., LL.D., Bar.-at-Law. 56, *Mirzapur Street. Calcutta.*
1920 Jan. 7.	R.	Suhrawardy, Hassan, M.D., F.R.C.S.I., L.M. (Rotunda) F.M.S., London, F.C.U., District Medical Officer. *Lillooah, E.I.R.*
1916 Sept. 27.	N.R.	Sutherland, Rev. W. S., D.D., Scottish Universities Mission. *Kalimpong. Darjeeling Dist.*
1907 June 5.	A.	Swinhoe, Rodway Charles John. *Europe. (c/o High Court, Rangoon.)*
1919 June 4.	A.	Tacchella, C. F. H. *Europe.* (*c/o Indian Institute of Science, Bangalore.*)
1909 Jan. 6.	R.	Tagore, Kshitindranath, B.A. 6/1, *Dwarkanath Tagore Lane, Calcutta.*
1914 April 1.	R.	Tagore, Prafulla Nath. 1, *Darpanarain Tagore Street, Calcutta.*
1898 April 6.	R.	Tagore, The Hon. Maharaja Sir Prodyat Coomar, Bahadur, Kt. *Pathuriaghatta. Calcutta.*
1904 July 6.	F.M.	Talbot, Walter Stanley, I.C.S. c/o Messrs. H. S. King & Co. 9, *Pall Mall, London. S.W.*
1910 Aug. 3.	N.R.	Tancock, Major Alexander Charles. 31*st Punjabis, Nowshera, N.W.F.P.*
1893 Aug. 31.	N.R.	Tate, George Passman. 56, *Cantonment, Bareilly, U.P.*
1906 Dec. 5.	N.R.	Tek Chand, Dewan, B.A., M.R.A.S., I.C.S., Deputy Commissioner. *Gujranwala, Punjab.*
1878 June 5.	F.M.	Temple, Colonel Sir Richard Carnac, Bart., C.I.E., Indian Army. 9. *Pall Mall, Lond.*
1911 Mar. 1.	F.M.	Thomas, F. W., M.A., Ph.D., Librarian. India Office. *London.*
1909 Aug. 4.	A.	Thompson, The Hon. Mr. John Perronet, M.A., I.C.S. *Europe.* (*c/o India Office.*)
1904 June 1.	A.	*Tipper, George Howlett, M.A., F.G.S., F.A.S.B. *Europe.* (*c/o Geological Survey of India, Calcutta.*)

Date of Election.		
1907 Feb. 6.	A.	*Travers, Morris William, D.Sc., F.R.S., F.A.S.B. 43, *Warwick Gardens, London, W.*
1861 June 5.	L.M	Tremlett, James Dyer, M.A., I.C.S. (retired). *Dedham, Essex, England.*
1917 Dec. 5.	N.R.	Tripathi, Ramprasad. Reader in Modern Indian History. *The University, Allahabad.*
1894 Sep. 27.	R.	Vasu, Nagendra Nath. 20, *Visvakosh Lane, Bagbazaar, Calcutta.*
1900 Aug. 29.	A.	Vaughan, Lieut.-Col. Joseph Charles Stoelke, I.M.S. *Europe (c/o India Office.)*
1901 Mar. 6.	F.M.	*Vogel, Jean Philippe, Litt.D., F.A.S.B. *The University, Leiden, Holland.*
1894 Sept. 27.	L M.	Vost, Lieut.-Col. William, I.M.S., 26, *Crystal Palace Rack Road, Sydenham, London, S.E.*
1902 Oct. 29.	R.	*Vredenburg, Ernest, B.L., B.Sc., A.R.S.M., A.R.C.S., F.G.S., F.A.S.B., Superintendent, Geological Survey of India. *Calcutta.*
1907 July 3.	R.	Walker, Harold, A.R.C.S., F.G.S., A.M. Inst.M., Assistant Superintendent, Geological Survey of India. *Calcutta.*
1918 April 3.	N.R.	Wall, Lt.-Col. F., C.M.G., I.M.S. *U.S. Club, Bangalore.*
1911 Feb. 1.	N.R.	Waters, Dr. Harry George, F.R.I.P.H., Chief Medical Officer, E.I.R. *Allahabad.*
1909 Dec. 1.	N.R.	Webster, J. E., I.C.S. *Sylhet, Assam.*
1913 April 2.	R.	White, Bernard Alfred. *Chartered Bank Buildings, Calcutta.*
1915 Jany. 6.	N.R.	Whitehouse, Richard H. *Tuticorin, Madras.*
1906 Sept. 19.	N.R.	Whitehead, Richard Bertram, I.C.S. *Rupar, Umbala, Punjab.*
1915 May 5.	A.	Williams, L. F. Rushbrook, B.A., B.Litt. *Europe.* (*c/o Allahabad University.*)
1919 May 7.	N.R.	Wills, Cecil Upton, B.A., I.C.S. *Nagpur.*
1906 Mar. 7.	N.R.	Woolner, Alfred Cooper, M.A. *Europe.* (*c/o Punjab University, Lahore.*)
1908 April 1.	A.	Wordsworth, William Christopher. *Europe.* (*c/o Educational Dept., Bengal.*)
1894 Aug. 30.	N.R.	Wright, Henry Nelson, B.A., I.C.S. Dist. Judge, *Bareilly.*
1911 Aug. 2.	A.	Young, Gerald Mackworth, B.A., I.C.S. *Europe.* (*c/o India Office.*)

Date of Election.		
1906 June 6.	F.M.	Young, Mansel Charles Gambier. *Khagaul P.O. Dinapore, E.I.R.*
1910 April 6.	N.R	Young, Capt. Thomas Charles McCombie. M.B., I.M.S. *Shillong, Assam.*
1919 Feb. 5.	N.R.	Yazdani, G. *Hyderabad, Deccan.*
1919 July 2.	N.R.	Zafar Hasan, *Archaeological Survey of India, Delhi.*

SPECIAL HONORARY CENTENARY MEMBERS.

Date of Election.	
1884 Jan. 15.	Revd. Professor A. H. Sayce, Professor of Assyriology, Queen's College. *Oxford, England.*
1884 Jan. 15.	Monsieur Émile Senart. 18, *Rue François Ier. Paris, France.*

HONORARY FELLOWS.

Date of Election.	
1879 June 4.	Dr. Jules Janssen. *Observataire d'Astronomie Physique de Paris, France.*
1895 June 5.	Charles H. Tawney, Esq., M.A., C.I.E. *c/o India Office, London.*
1896 Feb. 5.	Professor Charles Rockwell Lanman. 9, *Farrar Street, Cambridge, Massachusetts, U.S. America.*
1899 Dec. 6.	Professor Edwin Ray Lankester, M.A., LL.D., F.R.S. *British Museum (Nat. Hist.), Cromwell Road, London, S.W.*
1899 Dec. 6.	Professor Edward Burnett Tylor, D.C.L., LL.D., F.R.S., Keeper, University Museum. *Oxford, England.*
1904 Mar. 2.	Professor Sir Ramkrishna Gopal Bhandarkar. K.C.I.E. *Poona.*
1904 Mar. 2.	Sir Charles Lyall, M.A., K.C.S.I., C.I.E., LL.D. 82. *Cornwall Gardens, London, S.W.*
1904 Mar. 2.	Sir George Abraham Grierson, K.C.I.E., Ph.D., D.Litt., C.I.E., I.C.S. (retired). *Rothfarnham. Camberley, Surrey, England.*
1906 Mar. 7.	The Right Hon'ble Baron Curzon of Kedleston, M.A., D.C.L., F.R.S. 1, *Carlton House Terrace, London, S.W.*

Date of Election.	
1908 July 1.	Lieut.-Col. Henry Haversham Godwin-Austen, F.R.S., F.Z.S., F.R.G.S., *Nora Godalming, Surrey, England.*
1911 Sept. 6.	Lieut.-Col. Alfred William Alcock, C.I.E., M.B., LL.D., C.M.Z.S., F.R.S., I.M.S. (retd.). *Heathlands. Erith Road, Belvedere, Kent, England.*
1911 Sept. 6.	Prof. Edward George Browne, M.A., M.B., M.R.C.S., L.R.C.P., M.R.A.S. *Pembroke College, Cambridge.*
1911 Sept. 6.	Mahamahopadhyaya Kamakhyanath Tarkavagisa. 111-4, *Shambazar Street, Calcutta.*
1915 Aug. 4.	Prof. Sir Paul Vinogradoff, F.B.A., D.C.L. 19, *Linton Road, Oxford. England.*
1915 Aug. 4.	Sir Patrick Manson, G.C.M.G., M.D., LL.D., F.R.C.P. 21, *Queen Anne Street. Cavendish Square, London, W.*
1915 Aug. 4.	Sir Joseph John Thomson, Kt., O.M., M.A., Sc.D., D.Sc., LL.D., Ph.D. *Trinity College. Cambridge, England.*
1916 Dec. 6.	Dr. G. A. Boulenger, F.R.S., LL.D., British Museum (Nat. Hist.). *Cromwell Road, London, S.W.*
1917 May 2.	Herbert A. Giles, Esq., LL.D., University of Cambridge. *Cambridge.*
1920 Feb. 4.	Sir Charles Eliot, K.C.M.G., C.B., M.A., LL.D., D.C.L. *H.M. Ambassador at Tokyo.*
1920 Feb. 4.	Prof. T. W. Rhys Davids, LL.D., Ph.D., D.Sc. *University College, London.*
1920 Feb. 4.	Prof. Sylvain Levi, Prof., College of France. *Paris.*
1920 Feb. 4.	Sir Aurel Stein, K.C.I.E., Ph.D., D.Litt., D.Sc. *Srinagar, Kashmir.*
1920 Feb. 4.	Prof. A. Foucher, D.Litt., Prof. University of Paris.
1920. Feb. 4.	Arthur Keith, Esq., M.D., F.R.C.S,, LL.D., F.R.S., Royal College of Surgeons of England. *Lincoln's Inn Fields, London, W.C.* 2.
1920 Feb. 4.	R. D. Oldham, Esq., F.R.S., F.G.S., F.R.G.S. 1, *Broomfield Road, Kew, Surrey, England.*
1920 Feb. 4.	Sir David Prain, Kt., C.M.G., C.I.E., M.A., M.B., LL.D., F.R S.E., F.L.S., F.R.S,, F.Z.S., M.R.I.A., *Royal Botanic Gardens, Kew, Surrey, England.*
1920 Feb. 4.	Sir Joseph Larmor, Kt., M.P., M.A., D.Sc., LL.D , D.C.L., F.R.S., F.R.A.S. *Cambridge.*
1920 Feb. 4.	Sir James Frazer, Kt., D.C.L. LL.D., Litt.D. 1, *Brick Court, Temple, London, E.C.* 4.
1920 Feb 4.	Prof. J. Takakusu. *Imperial University of Tokyo, Japan.*

FELLOWS.

Date of Election.	
1910 Feb. 2.	N. Annandale, Esq., D.Sc., C.M.Z.S., F.L.S.
1910 Feb. 2	The Hon'ble Justice Sir Asutosh Mukhopadhyaya, Kt., C.S.I., M.A., D.L., D.Sc., F.R.A.S., F.R.S.E.
1910 Feb. 2.	I. H. Burkill, Esq., M A., F.L.S.
1910 Feb. 2	Mahamahopadhyaya Haraprasad Shastri, C.I.E., M.A.
1910 Feb. 2.	Sir Thomas Holland, K.C.S.I., K.C.I.E., D.Sc. A.R.C.S., F.G.S., F.R.S.
1910 Feb. 2.	T. H. D. LaTouche, Esq., B.A., F.G.S.
1910 Feb. 2.	Lieut.-Colonel D. C. Phillott. Ph.D., Indian, Army (retired).
1910 Feb. 2.	Sir Prafulla Chandra Ray. Kt., D.Sc.
1910 Feb. 2.	Lieut.-Col. Sir Leonard Rogers, Kt., C.I.E., M.D., B.S., F.R.C.P., F.R.C.S., F.R.S., I.M.S.
1910 Feb. 2.	Sir E. D. Ross, Kt., C.I.E., Ph.D.
1910 Feb. 2.	M. W. Travers, Esq., D.Sc., F.R.S.
1911 Feb. 1.	The Hon. Sir E. A. Gait, K.C.S.I., C.S.I., C.I.E., I.C.S.
1911 Feb. 1.	Sir H. H. Hayden, Kt., C.S.I., C.I.E., D.Sc., B.A., B.E., B.A.I., F.G.S., F.R.S.
1912 Feb. 7.	H. Beveridge, Esq., I.C.S. (retired).
1912 Feb. 7.	Sir J. C. Bose, Kt., C.S.I., C.I.E., M.A., D.Sc.
1912 Feb. 7.	P. J. Brühl, Esq., Ph.D., F.C.S.
1912 Feb. 7.	Capt. S. R. Christophers. I.M.S.
1912 Feb. 7.	Charles Stewart Middlemiss, Esq., B.A., F.G.S.
1912 Feb. 5.	Lieut.-Col. A. T. Gage, I.M.S.
1913 Feb. 5.	E. Vredenburg, Esq., B.I., B.Sc., A.R.S.M., A.R.C.S., F.G.S.
1913 Feb. 5.	J. Ph. Vogel, Esq., Ph.D., Litt.D.
1913 Feb. 5.	Dr. S. W. Kemp,, B.A.
1915 Feb. 3.	Major E. D. W. Greig, C.I.E., M.B., I.M.S.
1915 Feb. 3.	G. H. Tipper, Esq., M.A., F.G.S.
1915 Feb. 3.	D. B. Spooner, Esq., Ph.D.
1915 Feb. 3.	H. H. Haines, Esq., F.C.H., F.L.S.
1916 Feb. 2.	Lieut.-Col. C. Donovan, M.D., I.M.S.
1916 Feb. 2.	The Hon. Mr. R. Burn, C.I.E., I.C.S.
1916 Feb. 2.	L. L. Fermor, Esq., A.R.S.M., D.Sc., F.G.S.
1917 Feb. 7.	G. C. Simpson, Esq., D.Sc., F.R.S.
1917 Feb. 7.	F. H. Gravely, Esq., D.Sc.
1918 Feb. 6.	J. L. Simonsen, Esq., Ph.D.
1918 Feb. 6.	Lieut.-Col. D. McCay, M.D., I.M.S.
1918 Feb. 6.	The Hon Mr. Abullah Al-Mámun Suhrawardy, M.A., Ph.D.
1919 Feb. 5.	J. Coggin Brown, Esq., O.B.E., M.I.M.E., F.G.S.
1919 Feb. 5	W. A. K. Christie, Esq., B.Sc., Ph.D.

Date of Election.	
1919 Feb. 5.	D. R. Bhandarkar, Fsq., M.A.
1919 Feb. 5.	Major R. B. Seymour Sewell, I.M.S.

ASSOCIATE MEMBERS.

Date of Election.	
1875 Dec. 1.	Revd. J. D. Bate. 15, *St. John's Church Road, Folkestone, Kent, England.*
1885 Dec. 2.	Dr. A. Führer, Prof. of Sanskrit, 5, *Dorenbach strasse Bininngen, Basel, Switzerland.*
1899 Nov. 1.	Revd. E. Francotte, S.J. 30, *Park Street, Calcutta.*
1902 June 4.	Revd. A. H. Francke. *Europe.*
1908 July 1.	Rai Sahib Dinesh Chandra Sen, B.A. 19, *Visvakos Lane, Calcutta.*
1910 Sept. 7.	Shamsul Ulama Maulavi Ahmad Abdul Aziz. *Azeez Bag, City-Hyderabad, Deccan.*
1910 Sept. 7.	L. K. Anantha Krishna Iyer, Esq. *Trichur.*
1910 Dec. 7.	Rev. H. Hosten, S.J. 30, *Park Street, Calcutta.*
1915 Mar. 3.	E. Brunetti, Esq. 27, *Chowringhee Road, Calcutta.*
1915 Dec. 1.	Pandit Jainacharya Vijayadharma Surisvaraji, *Yasovijaya Granthamal Office, Benares City.*
1919 Sept 3.	Hannah, H. Bruce. *Bengal Club, Calcutta.*

LIST OF MEMBERS WHO HAVE BEEN ABSENT FROM INDIA THREE YEARS AND UPWARDS.*

* *Rule* 40.—After the lapse of three years from the date of a member leaving India, if no intimation of his wishes shall in the interval have been received by the Society, his name shall be removed from the List of Members.

The following members will be removed from the next Member List of the Society under the operation of the above Rule :—

Rev. Hilarion Basdekas.
Lieut. Cecil Alexandar Boyle, 11th King Edward's Lancers.
The Right Hon'ble Thomas David Carmichael, Baron of Skirling, K.C.I.E., K.C.M.G.
Capt. Lewis Cock, I.M.S.
Capt. Archer Irvine Fortescue, R.A.M.C.

Lieut. Reginald Frankland Francis, I.A.
M. van Genus, Esq.
Herbert Holmwood, Esq., I.C.S. (*retired*).
Henry Rosher James, Esq., M.A.
William Alfred Murray, Esq. B.A., M.B.
H. St. J. B. Philby, Esq., I.C.S.
P. A. Rogalsky, Esq.
Imre George Schwaiger, Esq.
Capt. Claude Bayfield Stokes.
Roadway Charles John Swinhoe, Esq.
Lieut.-Col. James Charles Stoelke Vaughan, I.M.S.

LOSS OF MEMBERS DURING 1919.

By Retirement.

Ordinary Members.

Charu Deb Banerji, Esq., M.A., LL.B.
Col. Sir. S. G. Burrard, K.C.S.I.
Dwarkanath Chakravarti Esq., M.A., B.L.
Kedar Nath Dutt, Esq.
Miss Regina Guha, B.A., B.L.
Prakash Chandra Mitra, Esq.
Edmund Alexander Molony, Esq., I.C.S.
Col. H. T. Pease, C.I.E
E. J. Rapson, Esq.
A. de Bois Shrosbree, Esq.
Lieut.-Col. John Stephenson, I.M.S.
C. A. Storey, Esq.
H. G. Tomkins, Esq., C.I.E.
Ernest Herbert Cooper Walsh, Esq., I.C.S.
Edwin Roy Watson, Esq., M.A.
Sir John George Woodroffe, Kt.

By Death.

Ordinary Members.

Rai Monmohan Chakravarti, Bahadur.
James Crawfurd, Esq.
The Hon. Sir W. A. Ironside.
Nawab Haji Mahomed Ishak Khan.
Dr. Amrita Lal Sircar.
Valavanur Subramania Iyer, Esq.
Lieut.-Col. William Dunbar Sutherland.
Dr. L. P. Tessitori.

RULE 38.

Thakur Birendranath Bose.
Capt. Sir George Duff-Sutherland-Dunbar. Bart. 19th Punjabis.
H. D. Graves-Law, Esq., I.C.S.
Ram Sawrupa Kaushala. Esq.
Babu Mritunjoy Roychaudhury.

RULE 40.

Capt. Robert Markham Carter, I.M.S.
Stephen Demetriadi, Esq.
Capt. Charles Aubery Godson. I.M.S.
Capt. Frederick Christian Hirst. Indian Army.
Lieut.-Col. Arthur Holbrook Nott. I.M.S.
Major O. A. Smith, Indian Army.
Capt. Francis Hugh Stewart, I.M.S.
Major Michael Harris Thornely. I.M.S.
Capt. Edward Owen Thurston, I.M.S.
Lieut. G. Harris, Indian Army.

ELLIOTT GOLD MEDAL AND CASH.

RECIPIENTS.

1893 Chandra Kanta Basu.
1895 Yati Bhusana Bhaduri, M.A.
1896 Jnan Saran Chakravarti, M.A.
1897 Sarasi Lal Sarkar, M.A.
1901 Sarasi Lal Sarkar, M.A.
1904 Sarasi Lal Sarkar, M.A.
1904 Surendra Nath Maitra, M.A.
1907 Akshoyakumar Mazumder.
1911 Jitendra Nath Rakshit.
1911 Jatindra Mohan Datta.
1913 Rasik Lal Datta.
1913 Saradakanta Ganguly.
1913 Nagendra Chandra Nag.
1913 Nilratan Dhar.
1918 Bibhutibhushan Dutta, M.Sc.
1919 Dr. Jnanendra Chandra Ghosh.

BARCLAY MEMORIAL MEDAL.

Recipients.

1901 E. Ernest Green, Esq.
1903 Major Ronald Ross, F.R.C.S., C.B., C.I.E., F.R.S., I.M.S. (retired).
1905 Lieut.-Colonel D. D. Cunningham, F.R.S., C.I.E., I.M.S. (retired).
1907 Lieut.-Colonel Alfred William Alcock, M.B., LL.D., C.I.E., F.R.S.
1909 Lieut.-Colonel David Prain, M.A., M.B., LL.D., F.R.S., I.M.S. (retired).
1911 Dr. Karl Diener.
1913 Major William Glen Liston, M.D., C.I.E., I.M.S.
1915 J. S. Gamble, Esq., C.I.E., M.A., F.R.S.
1917 Lieut.-Colonel Henry Haversham Godwin-Austen, F.R.S., F.Z.S., F.R.G.S.
1919 N. Annandale, Esq. D.Sc., C.M.Z.S., F.L.S., F.A.S.B.

[APPENDIX]

ABSTRACT STATEMENT

OF

RECEIPTS AND DISBURSEMENTS

OF THE

ASIATIC SOCIETY OF BENGAL

FOR

THE YEAR 1919.

STATEMENT

1919. *Asiatic Society*

Dr.

To Establishment.

				Rs.	As.	P.	Rs.	As.	P.
Salaries ...	...	...	...	6,469	12	6			
Commission	...	...	...	630	9	9			
Pension ...	...	...	...	224	0	0			
Grain Allowance	...	...	..	64	15	6			
War Bonus	...	...	...	643	12	1			
							8,033	1	10

To Contingencies.

Stationery...	...	...	...	122	3	9			
Light and Fans	...	...	...	187	1	0			
Taxes ...	...	...	...	1,495	0	0			
Postage ...	...	...	...	550	1	9			
Freight ...	...	...	...	237	5	4			
Auditor's fee	...	...	...	150	0	0			
Petty Repairs	...	...	...	133	12	0			
Insurance	...	...	...	343	12	0			
Winter clothing	...	...	...	42	11	10			
Miscellaneous	...	...	...	350	14	0			
							3,612	13	8

To Library and Collections.

Books ...	...	...	...	710	2	6			
Binding ...	...	...	..	595	9	0			
							1,305	11	6

To Publications.

Journal and Proceedings, and Memoirs	...	9,136	11	3					
Indexes	...	178	7	0					
To printing charges of Circulars, etc.	...	536	12	0					
					9,851	14	3		
To Personal Account (Written-off)	...	...			608	5	0		
Balance	...	...			2,00,319	11	9		
Total Rs.	...				2,23,726	10	0		

No. 1.
of Bengal. *1919.*

Cr.

				Rs.	As.	P.	Rs. As. P.
By Balance from last Report	...	...	...				1,96,833 3 3
By Cash Receipts.							
Interest on Investments	...	...		9,971	1	6	
Rent of Room ...	...	...		600	0	0	
Publications sold for cash	...	...		117	12	0	
Government allowance—for publication of papers in Journal ...	...	...		2,000	0	0	
Miscellaneous ...	...	...		547	2	9	
							13,236 0 3
By Personal Account.							
Members' subscriptions	...	...		8,958	0	0	
Compound Subscription	...	...		234	0	0	
Subscriptions to Journal and Proceedings, and Memoirs ...	...	...		1,872	0	0	
Admission fees	...	...	...	864	0	0	
Sales on credit	...	...	...	1,501	8	0	
Miscellaneous	...	...	...	227	14	6	
							13,657 6 6
TOTAL Rs.			...				2,23,726 10 0

E. & O. E.

R. D. MEHTA,
Hon. Treasurer.

Calcutta, 31*st December*, 1919.

STATEMENT

1919. Barclay Memorial Fund in Account

From a sum of Rs. 500 odd given in 1896 by the Surgeon
conragement of Medical

Dr.

To Cash Expenditure.

			Rs.	As.	P.	Rs.	As.	P.
Cost of Medal ...	...	...	7	6	0			
Cost of Cheque Book ...	...	...	2	0	0			
						9	6	0
To Balance—								
G.P. Notes (face value)	...	...	500	0	0			
Accumulated interest	...	...	74	2	10			
						574	2	10
Total Rs.		...				583	8	10

STATEMENT

1919. Servants' Pension

Founded in 1876 as the Piddington Pension Fund,

Dr.

To Cash Expenditure.

			Rs.	As.	P.	Rs.	As.	P.
Pension	...		44	0	0			
Commission for realizing interest	...		0	4	0			
						44	4	0
Balance	...					1,572	15	10
Total Rs.	...					1,617	3	10

No. 2.

with the Asiatic Society of Bengal. *1919.*

General, I.M.S., for the foundation of a medal for the en- and Biological Science.

Cr.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Report—						
G.P. Notes (face value)	500	0	0			
Accumulated interest	69	2	4			
				569	2	
By Cash Receipt.						
Interest				14	6	6
Total Rs. ...				583	8	10

E. & O. E.

R. D. Mehta,

Calcutta, 31*st December*, 1919. *Hon. Treasurer.*

No. 3.

Fund. *1919.*

with Rs. 500 odd from the Piddington Fund.

Cr.

	Rs.	As.	P.
By Balance from last Report	1,568	3	10
By Cash Receipt.			
Interest	49	0	0
Total Rs. ...	1,617	3	10

E. & O. E.

R. D. Mehta,

Calcutta, 31*st December*, 1919. *Hon. Treasurer.*

STATEMENT

1919. *Building*

From a sum of Rs. 40,000 given by the Government of

Dr.

To Cash Expenditure.

				Rs.	As.	P.	Rs. As. P.
Engineer's fee				368	12	0	
Commission for realizing interest ...				1	11	0	
							370 7 0
To Balance—							
G. P. Notes (face value) ...			...	40,000	0	0	
Accumulated interest ...			...	12,200	8	0	
							52,200 8 0
Total Rs. ..			...				52,570 15 0

STATEMENT

1919. *Catalogue of Scientific Serial Publi-*
Asiatic Society

From a sum of Rs. 2,500 given by the Trustees of the Indian Museum

Dr.

To Cash Expenditure.

	Rs.	As.	P.
Printing	2,500	0	0
Total Rs. ...	2,500	0	0

No. 4.

Fund. *1919.*

India towards the rebuilding of the Society's Rooms.

Cr.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Report—						
G. P. Notes (face value) ...	40,000	0	0			
By Cash Receipts	11,172	10	0			
				51,172	10	0
Interest	...		...	1,398	5	0
TOTAL Rs.				52,570	15	0

E. & O. E.

R. D. MEHTA,

Hon. Treasurer.

Calcutta, 31*st December*, 1919.

No. 5.

cations, Calcutta, in Acct. with the *1919.*
of Bengal.

through the Government of India for the publication of catalogue.

Cr.

	Rs.	As.	P.
By Balance from last Report	2,500	0	0
TOTAL Rs. ...	2,500	0	0

E. & O. E.

R. D. MEHTA,

Hon. Treasurer.

Calcutta, 31*st December*, 1919.

STATEMENT

1919. Indian Science Congress in Account

From the subscriptions of

Dr.

To Cash Expenditure

			Rs.	As.	P.	Rs.	As.	P.
Contingencies			190	12	3			
Stationery			112	12	0			
Postage			179	10	9			
Printing			1,820	12	6			
Advertisement			247	4	0			
Light			381	13	0			
Advances			1,697	0	7			
Blocks			59	8	0			
Subscription refunded			5	0	0			
						4,694	9	1
	Balance					2,706	7	4
	Total Rs.					7,401	0	5

STATEMENT

1919. International Catalogue of Scienti-
Asiatic Society

From the subscriptions of subscribers, and from a sum of Rs. 1,000 given by

Dr.

To Cash Expenditure.

			Rs.	As.	P.	Rs.	As.	P.
Salaries			353	11	6			
Contingencies			9	10	0			
Postage			4	11	0			
War Bonus			11	8	0			
Subscriptions			1,628	0	5			
Printing			6	2	0			
Grain Allowance			6	0	0			
						2,019	10	11
	Balance					1,357	9	7
	Total Rs.					3,377	4	6

No. 6.

with the Asiatic Society of Bengal. 1919.

members of the Congress and by the Donations.

Cr.

		Rs.	As.	P.	Rs.	As.	P.
By Balance from last Report					2,190	14	5
By Cash Receipt.							
Subscriptions, etc.		3,626	15	0			
Bombay Government Donation		1,400	0	0			
Sir Dorab Tata's Donation		150	0	0			
Miscellaneous		33	3	0			
					5,210	2	0
Total Rs. ...					7,401	0	5

E. & O. E.

Calcutta, 31*st December*, 1919. R. D. Mehta, *Hon. Treasurer*.

No. 7.

fic Literature in Account with the 1919 of Bengal.

the Government of Bengal for expenses incurred in connection of the Bureau.

Cr.

	Rs.	As.	P.
By Balance from last Report	697	8	6
By Cash Receipt.			
Subscriptions	2,679	12	0
Total Rs. ...	3,377	4	6

E. & O. E.

Calcutta, 31*st December*, 1919. R. D. Mehta, *Hon. Treasurer*.

STATEMENT

1919. Oriental Publication Fund, No. 1, in

From a monthly grant made by the Government of Bengal for the publica-
(Rs. 500), and for the publication of Sanskrit

Dr.

To Cash Expenditure.

	Rs.	As.	P.	Rs.	As.	P.
Salaries	1,869	13	0			
War Bonus	187	12	8			
Freight	474	10	8			
Contingencies	89	15	6			
Books	19	2	0			
Postage	337	4	9			
Editing fee	384	0	0			
Printing charges	4,808	9	0			
Light and Fans	24	0	0			
Stationery	6	8	0			
Commission	120	2	9			
Grain Allowance	15	11	3			
Winter clothing	3	14	2			
				8,341	7	9
Personal Account (Written-off)	...			51	7	6
Balance ...	...			36,185	9	3
Total Rs. ...	...			44,578	8	6

STATEMENT

1919. Oriental Publication Fund, No. 2, in

From a monthly grant sanctioned up to March 1922, by the Government of
Historical Interest

Dr.

To Cash Expenditure.

	Rs.	As	P.
Printing charges	1,372	5	0
Balance	15,736	14	0
Total Rs. ...	17,109	3	0

No. 8.

Acct. with the Asiatic Soc. of Bengal. 1919.

tion of Oriental Works and Works on Instruction in Eastern Languages Works hitherto unpublished (Rs. 250).

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Report		25,890 11 9
By Cash Receipts.		
Government Allowance	9,000 0 0	
Sale of Publications	1,418 12 9	
Advances recovered	194 14 3	
		10,613 11 0
By Personal Account.		
Sales on credit	5,697 14 9	
Donation from Kashmir Durbar for printing Kashmiri Dictionary	2,000 0 0	
Miscellaneous	376 3 0	
		8,074 1 9
Total Rs. ...		44,578 8 6

E. & O. E.

Calcutta, 31*st December*, 1919. R. D. Mehta, *Hon. Treasurer.*

No. 9.

Acct. with the Asiatic Soc. of Bengal. 1919.

Bengal of Rs. 250 for the publication of Arabic and Persian Works of (without remuneration).

Cr.

	Rs. As. P.
By Balance from last Report	14,109 3 0
To Cash Receipt.	
Government Allowance	3,000 0 0
Total Rs. ...	17,109 3 0

E. & O. E.

Calcutta, 31*st December*, 1919. R. D. Mehta, *Hon. Treasurer.*

STATEMENT

1919. Oriental Publication Fund, No. 3, in

From special non-recurring grants made by the Government of Bengal
English translation of the Akbar-

Dr.

		Rs.	As.	P.
To Balance		397	9	6
Total Rs. ...		397	9	6

STATEMENT

1919. Bureau of Information in Account

From an annual grant of Rs. 1,200, made by the Govern-

Dr.

To Cash Expenditure.

		Rs.	As.	P.
Salary		100	0	0
Balance ...		2,100	0	0
Total Rs. ...		2,200	0	0

STATEMENT

1919. Anthropological Fund in Account

Dr.

To Cash Expenditure.

		Rs.	As.	P.
Books		78	10	9
Balance		973	9	3
Total Rs. ...		1,052	4	0

No. 10.

Acct. with the Asiatic Soc. of Bengal. 1919.

in 1908 of Rs. 3,000 and in 1914 of Rs. 2,000. for the publication of an
nama (without remuneration).

Cr.

				Rs.	As.	P.
By Balance from last Report	...	...	...	397	9	6
TOTAL Rs.			...	397	9	6

E. & O. E.

Calcutta, 31*st December*, 1919. R. D. MEHTA, *Hon. Treasurer.*

No. 11.

with the Asiatic Society of Bengal. 1919

ment of Bengal for the salary of the Officer-in-Charge.

Cr.

				Rs.	As.	P.
By Balance from last Report	...	...	...	1,000	0	0
BY CASH RECEIPT.						
Government Allowance	...		..	1,200	0	0
TOTAL Rs.			...	2,200	0	0

E. & O. E.
R. D. MEHTA,
Hon. Treasurer.

Calcutta, 31*st December*, 1919.

No. 12

with the Asiatic Society of Bengal. 1919.

Cr.

				Rs.	As.	P.
By Balance from last Report	...	...	...	1,052	4	0
TOTAL Rs.			...	1,052	4	0

E. & O. E.
R. D. MEHTA,
Hon. Treasurer

Calcutta, 31*st December*, 1919.

STATEMENT

1919. Sanskrit Manuscript Fund in Acct.

From an annual grant of Rs. 3,200, made by the Government of Bengal krit Manuscripts acquired by the Society for Government ; and Rs. 2,400

Dr.

To Cash Expenditure.

				Rs.	As.	P.	Rs.	As.	P.
Salaries ...	...	...	...	1,995	11	0			
Contingencies	..	...	...	11	12	3			
Salary of Officer-in-Charge		...		200	0	0			
Yearly Bonus	...	...	...	420	0	0			
War Bonus	...	...	...	198	1	9			
Light and Fans	...	...	...	24	0	0			
Postage	...	...	...	8	6	0			
Insurance ...	...	...		125	0	0			
Stationery...	...	...	...	6	8	0			
Grain Allowance	...	...	...	12	0	0			
							3,001	7	0
	Balance		...		...		10,640	6	0
		Total Rs.		...			13,641	13	0

STATEMENT

1919. Arabic and Persian MSS. Fund in

Dr.

To Cash Expenditure.

				Rs.	As.	P.	Rs.	As.	P.
Salaries ...	...	...	...	3,547	7	0			
Contingencies	...	...	...	9	15	6			
Travelling Allowance	..		.	52	12	0			
War Bonus	...	.	...	432	3	3			
Books ...		...	...	5	0	0			
Purchase of MSS	...	...	...	65	0	0			
Stationery	...	...	...	3	0	0			
Insurance		...	..	31	4	0			
Postage ...	...	...	...	3	7	6			
Grain Allowance	...	...	...	11	0	6			
							4,161	1	9
	Balance	...	...		...		9,066	12	7
		Total Rs.		...			13,227	14	4

No. 13.

with the Asiatic Society of Bengal. 1919.

and at present sanctioned to Mar. 31, 1923, for the cataloguing of Sans- from the same Government for the salary of the Officer-in-Charge.

Cr.

		Rs. As. P.	Rs As. P.
By Balance from last Report		...	7,918 13 0
By Cash Receipts.			
Government Allowance for Sans. MS. Preservation	...	3,200 0 0	
,, ,, ,, Cataloguing	...	2,400 0 0	
Sale of Publications	... ...	6 0 0	
			5,606 0 0
By Personal Account.			
Sale on credit	...		117 0 0
Total Rs.	...		13,641 13 0

E. & O. E.

R. D. Mehta,
Hon. Treasurer.

Calcutta, 31*st December*, 1919.

No. 14.

Acct. with the Asiatic Soc. of Bengal. 1919.

Cr.

	Rs. As. P.
By Balance from last Report	8,227 14 4
By Cash Receipt.	
Government Allowance	5,000 0 0
Total Rs. ...	13,227 14 4

E. & O. E.

Calcutta, 31*st December*, 1919.

R.. D. Mehta, *Hon. Treasurer.*

STATEMENT

1919. *Invest-*

Dr.

	Face Value. Rs.	As.	P.	Cost. Rs.	As.	P.
To Balance from last Report	2,84,300	0	0	2,73,206	3	10
TOTAL Rs. ...	2,84,300	0	0	2,73,206	3	10

FUNDS.	PERMANENT RESERVE.						TEMPORARY RESERVE.						Total.		
	Face Value.			Cost.			Face Value.			Cost.					
	Rs.	A.	P.	Rs.	A.	P.	Rs	A	P.	Rs.	A.	P.	Rs.	A.	P.
Asiatic Society ...	1,69,400	0	0	1,68,085	9	8	73,500	0	0	65,696	4	2	2,33,781	13	10
Building Fund ...	...	...	...	...	..	..	40,000	0	0	38,025	0	0	38,025	0	0
Servants' Pension Fund	1,400	0	0	1,399	6	0	...	...	...	...	...	..	1,399	6	0
TOTAL Rs. ...	1,70,800	0	0	1,69,484	15	8	1,13,500	0	0	1,03,721	4	2	2,73,206	3	10

STATEMENT

1919. *Treasury*

Dr.

	Rs.	As.	P.	Rs.	As.	P.
To Balance from last report :—						
Bills for 6 months from 3rd October, 1918, Rs. 5,000	4,887	8	0			
Bills for 6 months from 2nd December, 1918, Rs. 15,000	14,634	6	0			
Bills for 12 months from 17th December, 1918, Rs. 5,000	4,750	0	0			
				24,271	14	0
To Purchase :—						
Bills for 6 months from 1st May, 1919, Rs. 10,000	9,800	0	0			
Bills for 6 months from 2nd June, 1919, Rs. 15,000	14,700	0	0			
Bills for 6 months from 11th December, 1919, Rs. 10,000	9,750	0	0			
Bills for 6 months from 17th December, 1919, Rs. 5,000	4,875	0	0			
				39,125	0	0
TOTAL Rs. ...				63,396	14	0

No. 15.

ment. *1919.*

Cr.

			Face Value.			Cost.		
			Rs.	As	P.	Rs.	As.	P.
By Balance		...	2,84,300	0	0	2,73,206	3	10
TOTAL Rs.		...	2,84,300	0	0	2,73,206	3	10

Calcutta, 31*st December*, 1919.

E. & O. E.
R. D. MEHTA, *Hon. Treasurer.*

No. 16.

Bills. *1919.*

Cr.

				Rs.	A.	P.	Rs.	As.	P.
By Bank of Bengal ...	...	...		4,887	8	0			
,, Do.	...	...	...	14,634	6	0			
,, Do.	...	..	...	9,800	0	0			
,, Do.	...	...	...	14,700	0	0			
.. Do.	..	.	...	4,750	0	0			
							48,771	14	0
By Balance ...	...	...	...				14,625	0	0
TOTAL Rs.		...					63,396	14	0

Calcutta, 31*st December*, 1919

E. & O. E.
R. D. MEHTA, *Hon. Treasurer.*

STATEMENT

1919. *Fixed*

Dr.

	Rs.	As.	P.
To deposit for 6 months from 15th July, 1919, @ 3½% per annum	10,000	0	0
TOTAL Rs. ..	10,000	0	0

STATEMENT

1919. *Personal*

Dr.

	Rs.	As.	P.	Rs.	As.	P.
To Balance from last Report				3,861	8	3
Advances for postage, etc.	660	14	9			
Asiatic Society	13,657	6	6			
Oriental Publication Fund, No. 1 ...	8 074	1	9			
Sanskrit Manuscript Fund	117	0	0			
				22,509	7	0
TOTAL Rs. ...				26,370	15	3

No. 17.

Deposit. *1919.*

Cr.

			Rs.	As.	P.
By Balance	...	... ...	10,000	0	0
		TOTAL Rs. ...	10,000	0	0

E. & O. E.

R. D. MEHTA,

Hon. Treasurer.

Calcutta, 31*st December*, 1919.

No. 18.

Account. *1919.*

Cr.

			Rs.	A.	P.	Rs	As.	P.
By Cash Receipts	..	...		...		21,776	0	9
„ Asiatic Society	..	... ...	603	5	0			
„ Oriental Publication Fund, No. 1			51	7	6			
						654	12	6

By Balance.	Due to the Society.			Due by the Society.		
	Rs.	As.	P.	Rs.	As.	P.
Members ...	3,811	15	6	111	14	6
Subscribers ...	...	...	...	48	0	0
Narsing Chaube (Bill Collector) ...	..	...	...	100	0	0
Miscellaneous ...	1,237	9	9	849	8	9
	5,049	9	3	1,109	7	3

.. 3,940 2 0

TOTAL Rs. ... 26,370 15 3

E. & O. E.

R. D. MEHTA,

Hon. Treasurer.

Calcutta, 31*st December*, 1919.

STATEMENT

1919. *War*

Dr.

			Rs.	As.	P.
To Balance from last Report			5,000	0	0
	TOTAL Rs.	...	5,000	0	0

STATEMENT

1919. *Cash*

Dr.

			Rs.	As.	P.	Rs.	As.	P.
To Balance from last Report						7,788	7	10
,, Asiatic Society			13,236	0	3			
,, Barclay Memorial Fund			14	6	6			
,, Servants' Pension Fund			49	0	0			
,, Building Fund			1,398	5	0			
,, Indian Science Congress			5,210	2	0			
,, International Catalogne of Scientific Literature			2,679	12	0			
,, Oriental Publication Fund, No. 1 ...			10,613	11	0			
,, Do. Do. No. 2 ...			3,000	0	0			
,, Bureau of Information			1,200	0	0			
,, Sanskrit MSS. Fund			5,606	0	0			
,, Arabic and Persian MSS. Fund ...			5,000	0	0			
,, Treasury Bills			48,771	14	0			
,, Personal Account			21,776	0	9			
						1,18,555	3	6
	TOTAL Rs.	...				1,26,343	11	4

No. 19.

Bond. *1919.*

Cr.

		Rs.	As.	P.
By Balance		5,000	0	0
TOTAL Rs. ...		5,000	0	0

E. & O. E.

R. D. MEHTA,
Hon. Treasurer.

Calcutta, 31*st December*, 1919.

No. 20.

Account. *1919.*

Cr.

			Rs.	As.	P.	Rs.	As.	P.
By Asiatic Society			22,803	9	3			
,, Barclay Memorial Fund ...			9	6	0			
,, Servants' Pension Fund ...			44	4	0			
,, Building Fund			370	7	0			
,, Catalogue of Scientific Publications			2,500	0	0			
,, Indian Science Congress			4,694	9	1			
,, International Catalogue of Scientific Literature			2,019	10	11			
,, Oriental Publication Fund, No. 1 ...			8,341	7	9			
,, Do. Do. No. 2 ...			1,372	5	0			
,, Bureau of Information ...			100	0	0			
,, Anthropological Fund			78	10	9			
,, Sanskrit MSS. Fund			3,001	7	0			
,, Arabic and Persian MSS. Fund ...			4,161	1	9			
,, Treasury Bills			39,125	0	0			
,, Fixed Deposit			10,000	0	0			
,, Personal Account			660	14	9			
						99,282	13	3
	Balance ...	...				27,060	14	1
	TOTAL Rs.	...				1,26,343	11	4

E. & O. E.

R. D. MEHTA.
Hon. Treasurer.

Calcutta, 31*st December*, 1919.

STATEMENT

1919. *Balance*

LIABILITIES.

			Rs.	As.	P.	Rs.	As.	P.
Asiatic Society ...	...	...	2,00,319	11	9			
Barclay Memorial Fund	...	...	574	2	10			
Servants' Pension Fund	..	...	1,572	15	10			
Building Fund ...	...	...	52,200	8	0			
Indian Science Congress	...	..	2,706	7	4			
International Catalogue of Scientific Literature			1,357	9	7			
Oriental Publication Fund. No. 1		.	36,185	9	3			
Do. do. No. 2		...	15,736	14	0			
Do. do. No. 3		...	397	9	6			
Bureau of Information	...	...	2,100	0	0			
Anthropological Fund	...	...	973	9	3			
Sanskrit MSS. Fund ...	...	...	10,640	6	0			
Arabic and Persian MSS. Fund ...		...	9,066	12	7			
			3,33,832	3	11			
TOTAL Rs.		...	3,33,832	3	11			

We have examined the above Balance Sheet and the appended detailed Accounts with the Books and Vouchers presented to us and certify that it is in accordance therewith correctly setting forth the position of the Society as at 31st December 1919.

Calcutta,
11th May, 1920.

MEUGENS, PEAT & Co.,
Chartered Accountants. } Auditors

No. 21.

Sheet. *1919.*

ASSETS.

				Rs.	As.	P.	Rs.	As.	P.
Investment	...	...	...	2,73,206	3	10			
Treasury Bills	.	...	...	14,625	0	0			
Fixed Deposit	...	...	...	10,000	0	0			
Personal Account	..		..	3,940	2	0			
War Bond	..	...	..	5,000	0	0			
Cash Account	..	...	...	27,060	14	1			
							3,33,832	3	11
TOTAL Rs.			...				3,33,832	3	11

R. D. MEHTA,
Hon. Treasurer.

Calcutta, 31*st December*, 1919.

Liabilities up to 31st December, 1919.

FUNDS.

	Rs.	As.	P.
Asiatic Society	7,506	1	0
Oriental Publication Fund, No. 1	14,957	0	3
Do. Do. No. 2	1,575	0	0
TOTAL Rs. ...	24,038	1	3

Copy of Certified Statement of Securities in Custody of the Bank of Bengal on account of Asiatic Society of Bengal, December 31, 1919 :—

3½	per cent.	Loan of	1842-43	...	...	...	...	...		16,700
3½	,,	,,	,,	,,	1854-55	...	...	...	...	1,53,700
3½	,,	,,	,,	,,	1865	...	...	...	...	44,300
3½	,,	,,	,,	,,	1879	...	...	...	...	8,000
3½	,,	,,	,,	,,	1900-1	.	...	...	...	26,000
3½	,,	,,	,,	,,	1900-1		...	...		25,000
*3	,,	,,	,,	,,	1896-97	...	...	...	...	500
4	,,	,,	Terminable Loan of 1915-16			...	...	...	...	10,100
								TOTAL Rs.	...	2,84,300

[* Cashier's security deposit.—*Ed.*]

Copy of Certified Statement of Securities in Custody of the Alliance Bank of Simla, Ltd., on account of Barclay Memorial Fund, January 18, 1919 :—

3½	per cent.	Loan of	1854-55	...	...	...	...	...	300
3½	,,	,,	,,	,,	1854-55	...	..	...	...	100
3½	,,	,,	,,	,,	1900-01	...	...	...	...	100
								TOTAL Rs.	..	500

7. Opening Address in a Discussion on the Value of Bodily Measurements in Distinguishing Human Races.

By N. Annandale, D.Sc., F.A.S.B., *Zoological Survey of India.*

(With Plates III—VI).

[*Indian Science Congress, Nagpur, Jan. 1920.*]

In opening a scientific discussion it is important that there should be no doubt about the meaning of the terms we employ. What do we mean by a human race? The term "race" has in biology a meaning well understood, but difficult to express in words. A race may perhaps be defined as a body of individuals originally occupying a definite geographical area, and distinguished by constant but relatively unimportant physical characters from other individuals of the same species. All living mankind is now placed by most anthropologists in one species, but it is still possible to regard some of the more distinct racial types as having once been specifically distinct. Be this as it may, race is a purely morphological concept and has no reference to language, religion or culture. The English-speaking children of Syrians naturalized in the United States of America do not belong to the Anglo-Saxon race, if such a race can be said to exist; a Bengali who dressed himself in a kilt would not become a Highlander, any more than a Scotchman who adopted the Hindu religion would become a Brahmin. Philology, archaeology, the study of material culture, religion and folklore may all cast powerful sidelights on racial origins, but they cannot be made a solid foundation for any such study.

Further, granted that race is primarily and essentially a physical thing, the term is used by anthropologists in two different senses, one general the other particular. We talk of the three great races of mankind, the Ethiopian, the Mongolian and the Caucasian or Indo-European; but we also talk of the Munda race, or the Bengali race, or the Tai, or even the Siamese race. In either case a race is something different from and more comprehensive than a tribe, but it is always possible that a single tribe may be the only survivors of a race. In this discussion I propose to confine my remarks chiefly to races in a more limited sense. The differences between the primary divisions of mankind, which are certainly much greater than those on which "species" are often founded by students of the mammals, are frequently obscured by intermixture of

blood, but otherwise can usually be recognized without precise diagnosis. No one could confuse a Chinaman with a Negro, or either with a European or with any of the higher races of Peninsular India. The fact that a Burman might appear to belong either to the Mongolian or to the Indo-European stock need not concern us at present, any more than the other fact that the whole of mankind is not comprised in the three main groups thereof, even if we allow for possible admixture. Accepting, then, the definition of race that I have already given and further interpreting the phrase "relatively unimportant physical characters" in a restricted sense, we reach the gist of our discussion: Can human races be distinguished by measuring individuals belonging to them?

Let us define a little further. What do we mean by measurements? I would here again adopt a restricted meaning and imply by measurements actual mensuration with callipers, a goniometer, a tape or other instruments of the kind. Physiological tests and the observation of what are sometimes called descriptive characters I do not regard as measurements.

Our enquiry, therefore, narrows itself still further. Can we distinguish between human races by the aid of instruments of this kind? My own answer to the question would be that we can not, but that measurements may be profitably employed as a check on other observations, provided that they are taken with sufficient accuracy and on a sufficiently large number of individuals, and that we realize what we are measuring. Let us first see what these reservations imply.

In measuring living persons we are attempting to measure what we cannot see, to measure bones through an opaque covering of muscle, skin and adipose tissue. We have to find the points from which we measure mainly by the sense of touch. In a few measurements, such as those of the length and breadth of the head, there is no difficulty in attaining substantial accuracy, for the opaque covering of the bones is very thin and but slightly compressible. Even in such measurements we may, however, find considerable differences in the same individual at comparatively short intervals of time. For example, I have found by experiment that a week's growth of hair in a man may effect the breadth of his head as measured in the ordinary way by at least 2 millimetres, and in dimensions so small as those of the human head 2 millimetres may make a difference in the indices calculated. The difficulty in attaining accuracy is greatly increased in measuring the nose, for here the points (especially in many primitive races) are much more difficult to find, the tissues are more compressible and yield to an almost imperceptible pressure of the instrument, and the dimensions measured are still smaller. A difference of 1 millimetre in measuring the height of a nose brings about a quite considerable difference in the nasal index. Thus if we measure the height

as 50 mm. and the breadth as 40 mm. we get an index of 80, but if we measure the height as 51 mm. the result is 78·43. Slighter differences in the nasal index than this have been regarded as of racial significance, and to measure the nose of a living man accurately within a millimetre especially if its bridge is ill-defined, is not easy. Similarly (except that the measurements are greater and a small error relatively less important) with measurements of other parts of the body, and especially in measuring the length of the limbs, in which the points are particularly difficult to find. A practised anthropologist, aided by experience and by a knowledge of human or comparative anatomy, may overcome some of these difficulties. But it is often implied, if not stated, that anthropometry is a method of research in which any intelligent person can indulge after, or even without, the most elementary training. On the cover of the *Journal of the Royal Anthropological Institute of Great Britain and Ireland* the following advertisement appears:—

"Invaluable to Medical Officers, Teachers, etc.

REPORT

of the

ANTHROPOMETRIC COMMITTEE

of the

BRITISH ASSOCIATION,

Being the Final Report on Anthropometric Method.

Contains Full Instructions for Taking Measurements.

With 33 Illustrations.

PRICE ONE SHILLING NET."

In my own experience, which has been considerable both in India,[1] and in other countries, this advertisement is almost as optimistic as those from which persons afflicted by incurable diseases gain the hope of a miraculous cure. Of all the biological investigations I have myself undertaken I have found no technique more difficult than that of measuring living persons.

This may perhaps be due in some measure to lack of manual skill on my part, for the feats of anthropometry performed, and the speed with which they have been performed, by other anthropologists, and especially by the Japanese,[2] fill me with

[1] The anthropometrical measurements taken recently in the laboratory of the Zoological Survey in the Indian Museum are now being analysed mathematically by Mr. P. C. Mahalanobis in the Presidency College, Calcutta.

[2] See, for example, Kubo, T., *Beiträge zur physischen Anthropologie der Koreaner.* Published by the Imperial University of Tokyo, 1913.

astonishment, and despair. But there is another point usually ignored, namely that the accuracy of anthropometry depends not only on the experimenter but also on the subject of his experiment. People, especially those belonging to primitive races, are often nervous when being measured. They do not know what it is all about; they begin to fear some magic in it, or they are ashamed of exposing their bodies. Apart from the fact that nervousness is infectious, it is difficult to measure a person who can't keep still.

Further, as it has been accepted by anthropologists that all measurements of the trunk and limbs must be taken with

FIG. 1.

the subject in "the erect attitude," we must remember that the erect attitude does not mean the same thing in all individuals, and that if we calculate the proportionate length of a man's leg by the height of the highest point of the ball-head of the thigh-bone above the ground as he stands upright, and that of the top of his head as he stands in the same position, we do not get the same proportion in all individuals. Anatomically considered, the stature of a round-shouldered man is not the same as that of a man who has been regularly drilled and holds himself with square shoulders (cf. figs. 1 and 2, pl. III). Some of the figures published in Professor Rudolph Martin's great text-book of physical anthropology,[1] the most compre-

[1] *Lehrbuch der Anthropologie.* Jena, 1914.

hensive work of the kind in existence, suggest to me that the subject of his illustrations of anthropometric methods main

FIG. 2.

tained an attitude that could hardly have been maintained except by a man who had at one time undergone a military training. I may be wrong in this, but I would ask you to observe the angle made by the axis of the man 's thighs with that of the upright scale-rod in the figure here reproduced in outline on a reduced scale (fig. 1).

These difficulties are all inherent in the measurement of living persons. They can be to a considerable extent eliminated in dealing with the prepared skeleton. Even here, however, a difficulty, perhaps of greater fundamental importance, persists. I mean the fact that in most of our measurements we are attempting to estimate a curve, often complex, by measuring a straight line or an angle. Straight lines and true angles are not to be found in the human body, but these are what our measurements from point to point provide for us. You know the Urdu proverb, " Camel. Oh Camel, is there anything straight in your anatomy ?" I can think of no animal, human or otherwise, to which this is not applicable in a literal sense. Were our measurements sufficiently numerous they would form a possible basis for reconstructing curved outlines, but it would be impossible to select sufficiently numerous definite points at which to take them on any limb or other part of the body. Our system may, indeed, be compared to that of the Cubists in art. It is for this reason that the recent work of Berry and Robertson in Australia.[1] and particularly their tracings of crania, has taught us more about the origin of the Australian and Tasmanian races than all the measurements of living persons or of skulls and skeletons hitherto published. Tracings show contours in a way no measurement can do: the indices derived from measurements are merely a concise and convenient method of expressing certain proportions of a much simpler kind.

If this be true of crania, it is still more true of the living body, in which, as we all know if we think the matter out. racial peculiarities are not exclusively skeletal.

Take this photograph (fig. 2) of the head and bust of a Uriya fisherman from the north-east of the Ganjam district, a man probably near the aboriginal racial type of Peninsular India. Note the low receding forehead, the prominent bony eyebrows, the coarse outlines of the nose, the patent nostrils. which project outwards almost as much as downwards, the feebly developed chin, the fine wavy hair, the square shoulders and chest. How many of these characters could you express accurately by means of measurements ?

If we examine the body as a whole we realize still more

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[1] *Proceedings of the Royal Society of Edinburgh*, Vol. XXXI (1910). and *Transactions of the Royal Society of Victoria*, Vol. V (1909), and Vol. VI (1914).

clearly the impossibility of expressing in a metrical fashion what we can see. Here is the photograph of the full figure of a young Javanese as seen from behind (pl. IV, fig. 1). Note the smooth rounded contours. the sloping shoulders (in spite of an erect carriage), the small size of the shoulder-blades and particularly the apparent breadth of the pelvic region, which gives the figure an almost feminine appearance. Compare this with the other figures on the same plate and look at the next photograph (pl. V, fig. 1), which shows the front of the same man's trunk. Here you see the real nature of the apparent breadth of the pelvis. The pelvis itself is remarkably high and narrow, its anterior margins approaching one another at an acute angle, while the thighs, which are strongly developed, project with a marked outward flexure. This is a very important racial character among the peoples of Indonesia and represents a marked ethnic element; it is by no means universal among the Javanese (cf. fig. 2, pl. IV). Could you express it adequately by means of measurements? Compare the photographs with the next two, which show the same region in a young Anglo-Indian (fig. 3, pl. V) and in a young Javanese of different racial type (fig. 2, pl. V). In the former the body is almost as slim and the shoulders slope nearly as much, but you will see if you will compare the lines of the neck that the sloping shoulders are due to a sedentary occupation and not to any essential peculiarity of the skeleton, and you will also see that the apparent breadth of the pelvis is absent. although the basin is actually very much broader and flatter; because the lower limbs are less well developed and less curved at their upper extremity.[1] In the other Javanese the differences are still greater and the difference in racial type is equally apparent, though here the two men are nominally of the same race.

Some may think that in insisting on characters that cannot be measured I am wasting time. Even the most rigid upholder of pure anthropometry would hardly venture nowadays (except in India) to ignore the descriptive characters of his subjects. My point is that our conception of these characters should be revised. that they should be given a more prominent place in our scheme of investigation. and actual measurements made subordinate to them.

Supposing that we have evolved an ideal scheme[2] in which anthropometry and what I may perhaps call "anthroposcopy"

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[1] The type of thigh possessed by the first Javanese is, I believe, the type called "grasshopper thigh" by the Malays. See Skeat's *Malay Magic*.

[2] Valuable suggestions for a scheme of the kind are to be found, though not put forward as such, in Prof. Keith's paper on two descendants of the 'Bounty' mutineers in *Man* XVII, No. 88 (1917).

are combined in due proportions, why should it be necessary for us to measure and examine large numbers of individuals of each race? Partly in order to eliminate errors, and particularly because hardly any human race is, or has been for thousands of years, of unmixed origin. Race is one of the most persistent things in nature, but it is very exceptional for any one individual to illustrate in a perfect state the characteristic traits of any one of the strains from which he is derived. He may illustrate some traits of one race and other traits of another quite clearly, or his physical characters may be, as is more often the case, a regular palimpsest in which document after document has been superimposed in such a manner that decipherment is rendered difficult, in many individuals impossible. Occasionally one race predominates in the features or body of an individual. We have only to look at the portraits of Socrates, of Darwin and of Tolstoi to realize

Fig. 3.

how racial characters of a primitive stock submerged in age-long floods of alien blood may occasionally come to the surface. It is probable that few of the ancient Greeks had the rugged facial features of Socrates; certainly few historical Englishmen have had those of Darwin, and the fact that we may find the physical homologues of Tolstoi's face in any large collection of photographs of Russian peasants, or even of Japanese Ainus, merely indicates that Tolstoi was born in a community in which the primitive racial type of which certain traits were revived in his person had not been as yet completely submerged. Let us take another instance from the ancient Greeks. If few of them resembled Socrates, it is probable that not very many belonged to the type which their artists accepted as that of divine beauty. It has indeed been said not only that the Greek sculptors idealized this type, but even that they invented it. The Greeks, like all but a few isolated races, have undergone copious admixture of blood in the last two thousand

years, and yet that the artistic type not only existed in classical times but still, even now, occasionally emerges, is at any rate suggested by the two photographs I now show you (fig. 3), one the portrait of a young Greek (taken from von Luschan) of the Island of Skyros, the other that of the Hermes of Praxiteles, one of the most famous of the ancient Greek statues. Note the features they have in common—the curly hair, the high straight forehead, the straight profile of the nose, almost in a line with that of the forehead, the narrow vertical nostrils, the small mouth with its prominent lips, the small but firmly moulded chin, and particularly the general harmony of the features, difficult to express precisely in words, and impossible by measurements, but none the less apparent in a photograph.

A still more remarkable instance of this persistence and even resurrection of racial characters is that of the modern Armenians, who, as von Luschan [1] maintains, are the direct descendants of the ancient Hittites. The Armenian skull and also the features of the Armenian face are among the most characteristic of those of any human race. So peculiar is the skull that a perfectly normal example has actually been cited as illustrating artificial deformation of the cranium. In certain villages in Syria in which the ancient blood has apparently remained pure, the people, according to von Luschan, are "as like one another as eggs" .... a statement so bold that accuracy seems to be submerged in exaggeration. It is certainly not true of the Armenians we meet in India, who, with few exceptions, come from the neighbourhood of Ispahan in Persia. We know as a matter of history that these people are the descendants of a body of colonists who were transported to Persia by Shah Abbas in the 16th century from Julfa, south of the Caucasus. They have given the name of Julfa to the suburb of Ispahan which they still regard as their headquarters. For generations past the Armenians of the new Julfa have prided themselves on keeping their blood pure from admixture, but the early European travellers in Persia state that the Armenians of Ispahan were given wives by Shah Abbas. It is not surprising, therefore, to find among the Armenians of Calcutta two types, one but slightly modified from that of the ancient Hittites as shown in their own sculptures, the other a mixed Irano-Armenoid type. The two types occur together in the same family, and this again is not surprising, for, as we all know by experience, a child may take after either of his parents or after a more remote ancestor, and all the children of a family do not always resemble the same ancestor

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1 "The Early Inhabitants of Western Asia" (The Huxley Memorial Lecture for 1911). This view has not been universally accepted, but as to the antiquity of the Armenoid racial type there can be no doubt.

The photographs (pl. VI) I now show you are portraits of two Armenians from the new Julfa, both skilled mechanics. The first is that of a man (fig. 1) who may be said to represent the Armenoid type somewhat refined[1]; the second (fig. 2) represents a man of strongly mixed type. In the one you will note the disproportionate development of the upper part of the head, very high sloping forehead and calvaria, the abrupt posterior termination of the head with the peculiar dint so characteristically Armenoid, the long somewhat hooked nose, with its tumid nostrils, the long upper lip, the poorly-developed lower jaw. In the other you see traces of the same type in the high forehead and long nose, but both forehead and nose have a very different outline and the head is of quite a different form, showing little trace of the Armenoid type.

You will see from these photographs and from the state-

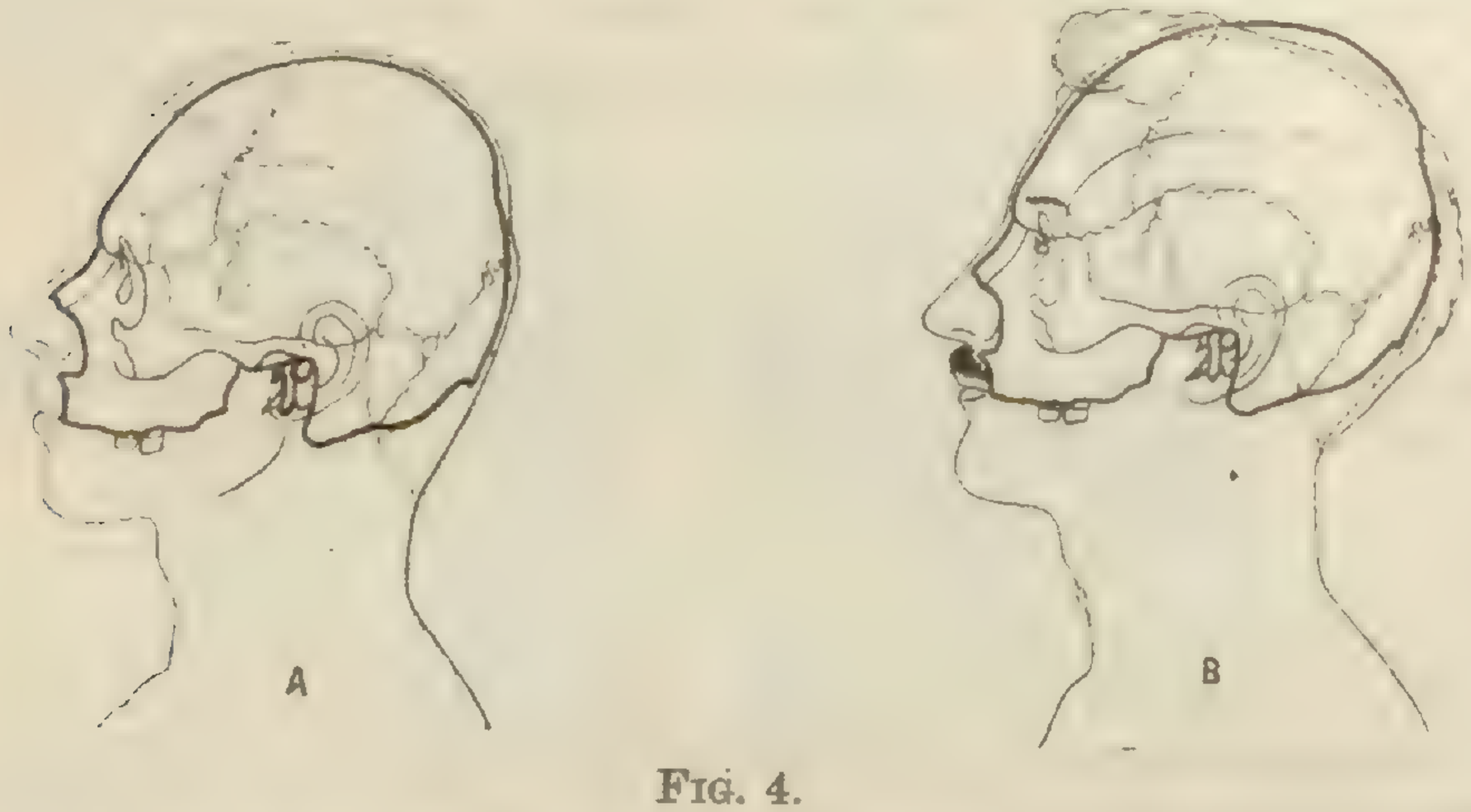

FIG. 4.

ments given in the description of plate VI that these two racial types differ from one another, so far as the head is concerned, to a far greater extent in outline than they do in point to point measurements. The second man's head is proportionately broader by measurements than the first, but appears from its outline, and particularly from the convexity of its posterior wall, to be longer. In short the measurements and indices (see explanation of plate VI) have little relation to the actual shape of the head. This fact is brought out still better if we fit the outline of each head over that of a typical Armenian cranium (copied from von Luschan), reduced in proportion (fig. 4). In the one man (A) the head fits admirably, in the other (B) it does not fit at all. Even here we are dealing merely with outlines in one plane.

I will now show you some photographs illustrating racial

[1] Educated Persian Armenians to whom I have shown von Luschan's paper often recognize his portraits of Syrian Armenians as resembling "villagers."

diversities among peoples usually believed to be of fairly pure stock. The number of illustrations that I can bring to your notice in the time at my disposal is of course small, but if any member of my audience will walk down a street in any Indian town he will be able, provided he has a quick eye and a knowledge of the costumes of the innumerable races and castes of India, to provide innumerable illustrations for himself.

My photographs are those (*a*) of Chinese carpenters from Canton and (*b*) of Siamese[1] criminals and countrymen from

FIG. 5.

the Province of Patani. Those of the Chinese (fig. 5) are particularly interesting. One of the men is of a common Mongoloid type, the other, though no one could doubt he was a Chinaman, has certain non-Mongoloid features, particularly his prominent nose and chin.[2] This case is one in which I do not wish to be dogmatic, for in it a pathological rather than a racial explanation might possibly be correct, and the atypical individual may be so *not* because of heredity but because of physiological idiosyncracy.

[1] Not reproduced here.

[2] Cf. Prof. Keith's address to the Anthropological Section of the British Association for 1919, reported in *Nature*, vol. CIV, No. 2611.

I need say very little about the photographs of the Siamese, merely pointing out the mixed Mongoloid, Malayan and Negrito elements to be noted in the features of the men depicted.

You must not let me give you the impression that I believe the result of admixture of race is as a general rule to produce individuals who belong definitely to either or any of the racial types represented by their ancestors. In the physique of the majority of people racial types are mingled and obscured and I think I have been justified in comparing a large proportion of human individuals to palimpsests. Do not think that I say that any accurate observer can decipher such documents at sight. The training of a member of the Criminal Investigation Department or of a judge on the bench would form an excellent basis for an anthropological training; but only a basis. A scientific observer must learn to formulate physical differences and resemblances precisely as well as to observe them, and if you claim that anthropology is not a scientific subject I give up my whole argument. All true biological investigations are comparative, and for comparative study you must have data that are not only accurate but strictly comparable. In India it has been, and often still is, maintained that anyone who knows and is in sympathy with a tribe can investigate that tribe anthropologically, without scientific training, without anatomical knowledge, without study of the literature of the subject, merely by following the dictates of the British Association's little hand-book. This attitude seems to me as if we were to claim that a man who had a good taste in colour should be entitled, with the aid of an elementary text-book of technical chemistry, to call himself a dyeing expert. Why physical anthropology, one of the most difficult and perhaps the most complex and obscure of all branches of biology, should be regarded as the happy hunting-ground of the intelligent amateur, I do not know—unless it be that mankind, prone to folly, is most foolish where man himself is most concerned. Man in his physical structure is *not* essentially different from other animals; biological science and emotional sentiment are incompatible.

EXPLANATION OF PLATES.

[The figures illustrating this address are selected from a large series of photographs taken in the zoological laboratory of the Indian Museum, Calcutta. The negatives are the property of the Zoological Survey of India, to the Director of which any inquiries about them should be addressed. They have been selected to illustrate special points raised in the text, but other points of interest are noted in the following descriptions.

The measurements and indices quoted have been taken in accordance with the British Association's hand-book, *Anthropometrical Investigations in the British Islands*: 1900. The numbers given in reference to colour are those of the slips of glass in Lovébond's pigmentation meter (see *Man*, vol. viii, No. 27)].

Plate III.

Fig. 1.—Lateral view of the full figure of a young Anglo-Indian of upright carriage.

Ancestry. Maternal grandfather English; Maternal grandmother Burmese; Paternal grandfather Scotch; Paternal grandmother "Anglo-Indian." *Age* 29. *Profession* laboratory assistant and clerk, but addicted to physical exercises. *State of health* good; weight 109 lb. *Skin* yellowish olive (on inner surface of upper arm 3 red, 2 yellow, 1 blue by anthropological tintometer). *Stature* 164 cm. *Cephalic index* 78·38. *Nasal index* 81·81. *Upper facial index* 44·46. *Proportionate length of lower limb* (from head of great trochanter) 52·01. *Face* remarkably square; *cheek-bones* flat but not coarse. *Eyes* narrow, with slight trace of epicanthus. *Nose* with well-developed bridge; the lower part triangular as seen from in front, rounded at the tip and by no means prominent; nostrils pointing downwards and slightly forwards, patent. *Note* the straight line of the lower limb, trunk, neck and head.

Fig. 2.—Lateral view of the full figure of Chinaman with round shoulders and bandy legs.

Ancestry. Canton Chinese. *Age* stated to be 26. State of health, poor. *Colour* pale olive yellow (4 red, 3 yellow, 1 blue on inner surface of upper arm). *Stature* 166 cm. *Cephalic index* 86·26. *Facial index* 44·16. *Nasal index* 78·0. *Face* almost semi-circular, the lower part being broadly rounded. *Cheek-bones* prominent but not very flat. Eyes narrow, oblique, with a well-developed epicanthus. *Nose* long, prominent, convex in profile and slightly hooked; the

nostrils dilated but directed downwards. *Upper lip* straight; lower lip slightly protuberant. *Chin* small, slightly retreating, but pointed. *Note* lack of continuity in line of head, neck, trunk and limbs.

A profile view of the head of the same man. taken some months earlier, is reproduced in text-fig. 5.

Plate IV.

Fig. 1.—Dorsal view of the full figure of a young Javanese of upright carriage and fine (Malayan) type.

Ancestry stated to be pure Javanese. *Age* 22. *Profession* assistant in exhibition, a skilled and athletic dancer and posturer. *State of health* fairly good, abcess on left lower arm; weight 100 lbs. *Skin* exceptionally yellow and smooth (on inner surface of upper arm 4 yellow, 4 red, 2 blue). *Stature* 160·5 cm. *Cephalic index* 90·75; head broadly triangular above. *Nasal index* 81·11. *Upper facial index* 44·44. *Proportionate length of lower limb* 53·7. *Face* narrowly and regularly oval; cheek-bones prominent but not coarse. *Prognathism* well-developed, involving both jaws. *Eyes* narrow, with slight trace of epicanthus. *Nose* flat, with ill-developed bridge; the lower part broadly triangular; the nostrils greatly expanded and opening downwards and outwards. *Points to be particularly noted in figure*—(1) Slight habit of body, (2) upright carriage, (3) sloping shoulders, (4) very small shoulder-blades, (5) strong development of the pelvic region, giving the figure an almost feminine appearance. (6) muscular development of the thighs, (7) slenderness of all the bones, (8) smooth. rounded contours of the body, (9) the concealment of the relative length of the lower limb.

Fig. 2.—Same view of the full figure of a young Javanese of coarser type.

Ancestry stated to be pure Javanese (Jokojokata). *Age* 25. *Profession* acrobat in circus. *State of health* good. *Skin* yellowish brown (inner surface of upper arm 5 red, 4 yellow, 1 black). *Stature* 151·5 cm. *Cephalic index* 84·65. *Nasal index* 69·09. *Upper facial index* 64. *Proportionate length of lower limb* 50·39. *Face* broadly oval; cheek-bones prominent but not very flat. *Eyes* as in fig. 1. *Nose* more prominent. less flat, with a better developed bridge and with less expanded nostrils than in fig. 1. *Prognathism* very slight.

Note the low stature, the square. relatively broad

trunk, the absence of apparent inflation of the pelvic region, the short limbs, coarser bones, larger shoulder-blades and darker colour of the skin.

FIG. 3.—Same view of the full figure of a young Anglo-Indian.

Ancestry—mixed Indian and European. *Age* 24. *Profession* musician (violincello). *State of health* good. *Skin* olive brown (5 red, 4 yellow, 3 blue on inner surface of upper arm). *Stature* 169 cm. *Cephalic index* 82·56. *Nasal index* 69·23. *Upper facial index* 57·93. *Proportionate length of lower limb* 52·13. *Face* square. *Features* of same type as man shown in fig. 1, pl. III. but face not so square. *Points to be noted in comparison with fig.* 1—(1) Figure almost as slight, but waist less marked and pelvic region apparently not so broad, (2) shoulder-blades much larger, (3) rounded shoulders associated with sedentary occupation, (4) contours of body much less smooth and rounded.

PLATE V.

FIG. 1.—Front view of the trunk of the man photographed in fig. 1, pl. IV.

In this view the slenderness of the trunk is still more marked and the inflation of the thighs appears so great that it seems as though the man were standing with his legs apart, which is not the case. The reason of this now becomes evident.

Note the very high and narrow pelvic basin and the acute angle at which its anterior margins approach one another; also the peculiar manner in which the thighs swell out from the pelvis, owing to the curvature of their heads, the angle at which they are set in the acetabulum and their own muscularity. This feature has also the result of concealing the acutal length of the whole limb.

FIG. 2.—Front view of the trunk of the man photographed in fig 2, pl. IV.

Note the compact, square form of the trunk. the absence of swelling in the pelvic region and the comparatively flat, broad pelvic basin with the anterior margins approaching one another at an obtuse angle (*cf.* Annandale, *Fascic. Malay.*, *Anthropology* II, p. 109, 1904) in reference to the Malay pelvis, which seems to be highly peculiar and would repay further study. My remarks in the paper cited are a good instance of

the fallacy of trusting solely to measurements in anthropological descriptions).

FIG. 3.—Front view of the trunk of the man photographed in fig. 3, pl, IV.

Note that while the trunk is nearly as slender in proportion as in fig. 1, the pelvic region is also slender and yet the pelvic basin is still broader and flatter than in fig. 2.

PLATE VI.

Heads of two young Armenian men from the Ispahan district, Persia.

FIG. 1.—Head of skilled mechanic aged 24 and in good health.

Stature 164 cm. *Length of head* 188 cm. *Breadth of head* 148 mm. *Height ot head* 130 mm. *Zygomatic breadth* 143 mm. *Upper face length* 67 mm. *Nasal height* 56 mm. *Nasal breadth* 35 mm. *Height of great trochanter* 880 mm. *Weight* 127 lb. Hair black.

Cephalic index 78·72.
Nasal index 62·5.
Height-breadth index (head) 87·56.
Height-length index (*head*) 67·20.
Upper facial index 46·89.
Proportionate length of lower limb 51·74.

FIG. 2.—Head of skilled mechanic aged 25 and in good health.

Stature 169 cm. *Length of head* 190 mm. *Breadth of head* 160 mm. *Height of head* 137 mm. *Zygomatic breadth* 145 mm. *Upper face length* 76 mm. *Nasal height* 60 mm. *Nasal breadth* 39 mm. *Height of great trochanter* 881 mm. *Weight* 140 lb. Hair black.

Cephalic index 84·22.
Nasal index 65·00.
Height-breadth index (head) 85·62.
Height-length index (head) 69·14.
Upper facial index 52·42.
Proportionate length of lower limb 52·13.

Note that the measurements and proportions are not correlated with the outlines of the heads.

1

2

1 2 3

1

2

1A

2B

8. Hindu Astronomical Deities.[1]

By G. R. Kaye.

(With Plates VII—XI).

1. The aim of the following note, which is ancillary to a study of the history of Hindu astronomy, is to exhibit briefly the main characteristics of the Hindu planetary deities, the *Navagraha*, and the cults connected with them. Purely astrological matters have been purposely excluded, for astrology and planetary worship are in India clearly differentiated, and it is doubtful whether the Hindu worship even connotes a belief in astrology. On the other hand, astrology perhaps plays a more important part in Hindu life than does the planetary cult, for the latter is always subordinate in its relation with other religious observances. In most works on the religions of India, indeed, either there is no reference at all to the cult, or the barest mention of it, and the study of planetary iconography appears to have been equally neglected.

Vedic Deities.

2. In Vedic times there was a group of gods—Sūrya, Savitṛi, Mitra and the other Ādityas—that has, with some propriety, been called a sun-god group. In the Rig Veda, however, the only one of these that is definitely astronomical is Sūrya, who was more closely related with the physical object than the others, occasionally, indeed, being the actual object itself. He was the source of light, the day-measurer, the dispeller of darkness, etc.; Savitṛi, the vivifier, represents a more abstract notion; Mitra was, something like the Mithra of the west, rather vaguely a god of light; while the other Ādityas were still less definitely astronomical.

Although there is nothing in the Rig Veda that marks any one of these gods, except Sūrya, as definitely connected with an astronomical body or phenomenon, yet they are all closely related to Sūrya and even are on some occasions definitely equated with him (and with each other) by name, and also, rather indefinitely, by attributes and functions. The

[1] I am greatly indebted to Mahāmahopādhyāya Haraprasād Śāstri, C.I.E., President of the Asiatic Society of Bengal, for advice and help in the preparation of this paper—particularly in connexion with the history of the Magas in India. For the photographs which have been utilised I am indebted to Messrs. Johnston & Hoffman, Calcutta, and to the Director General of Archaeology.

main characteristics of the group may be roughly summarised as follows :—

Sūrya.[1]	Savitṛi.[2]	Mitra.[3]	Ādityas.[4]
Son of Aditi [1] Son of Dyaus [2] Produced by various gods [3] Husband of Ushas [4] = Savitṛi	An Āditya [1] = Bhaga [2] = Mitra [3] = Sūrya	An Āditya [1] Generally coupled with Varuṇa.[2] = Savitṛi [3]	Mitra Aryaman Bhaga Aṁśa Daksha Varuṇa [1] Martaṇḍa [2] Savitṛi [3] Sūrya [4] Indra [5]
Eye of Mitra and Varuṇa [5] A bird [6] Chariot with seven horses [7]	Golden hands, etc.[4] Chariot with two horses [5]		
Measures days [8] Dispels darkness [9]	The vivifier [6]	Stirs up men and brings them together [5]	As a group gods of (?) celestial light [6]
Drives away sickness and evil dreams [10]	Drives away evil dreams, evil spirits and sorcerers [7]		

3. We have not included in the above group either Pūshan or Vishṇu. The former is sometimes said to be a sun-god but the connexion is extremely loose, although in later times Pūshan is used as a name of the sun.[5] Vishṇu in post-Vedic times became the first of the Ādityas and one of the great gods of the Hindu triad; but in the Rig Veda he holds a subordinate position. He is there characterised chiefly by his 'three steps,' which general opinion, without much warrant,

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[1] (1) RV i, 50 [13]; i, 191 [9]; viii, 90 [11]. (2) x, 37 [1] (3) ii, 12 [4]; ix, 96 [5]; &c. (4) vii, 75 [5] (5) i, 115 [1]; vi, 51 [1]; vii, 63 [1]; x, 37 [1]: &c. (6) v, 45 [9] (7) i, 50 [8]; iv, 13 [3]; v, 45 [9]; vii, 60 [3]; but vii, 63 [2] gives only one steed and in i, 115 [3], x, 37 [3], &c. the number is indefinite. (8) i, 50 [7]. (9) vii, 63 [1]; x, 37 [4] (10) x, 37 [4] [AV xiii summarises Sūrya's characteristics].

[2] (1) viii, 18 [3] (2) v, 82 [1]; vii, 33 [1,6] (3) v, 81 [4] (4) i, 35 [3-10]; vi, 71 [3-5]; vii, 38 [2]; vii, 45 [2] (5) i, 35 [2] (6) iii, 62 [10] (7) i, 35 [10]; v, 82 [4]; vii, 38 [7].

[3] (1) ii, 27 [1] (2) v, 72 [2]; &c; &c. (3) i, 136 [3]; iii, 59 [5]; v, 72 [2]; vii, 36 [2]; vii, 91 [12].

[4] (1) The first six names are given in ii, 27; see also viii, 18 [3]; &c. (2) x, 72 [3]. (3) vii, 85 [4]. (4) A. A. Macdonell *Vedic Mythol.* 44; but see H. Oldenberg *Rel. d. Ved.* 185.

[5] "The door of the true is covered with a golden disk. Open that, O Pūshan, that we may see the nature of the true. O Pūshan, only seer, Yama Sūryā, son of Prajāpati, spread thy rays and gather them." *Isā Upan.* 15-16.

refers to the course of the sun. In one not very clear passage (RV i,155[1]) he appears to be connected with the four quarters of the year, each of which consists of 90 days. In modern times his purely theistic characteristics hide any possible solar relationship.[1] He has few physical traits left, practically the only one being his anthropomorphic 'three strides.'

4. Other quasi-astronomical deities are the twin Aśvins and Soma. The former have been supposed to be connected with the morning and evening star,[2] but their connexion with any astronomical phenomenon is really very vague, although they are often associated with Sūryā, the daughter of the sun.[3] Their name implies the possession of horses and they have other traits which suggest some parallelism with the Greek Dioskouroi. Aśvinī is the name of the nakshatra usually identified with β and γ Arietis.

Soma is, in the Rig Veda, hardly connected with the moon at all[4]; but perhaps in the later books,[5] and certainly in the Atharva Veda,[6] Soma is a name of the moon. In later works the moon as a separate divinity is rarely mentioned and in modern times shares the subordinate position of the planetary gods. Considering the importance of the original Soma and the large part the moon plays in regulating religious practice in India, it is surprising to find that a moon-god proper has no place of importance in the Hindu pantheon.

5. There is some diversity of opinion regarding the relationship of these deities with astronomical bodies. We have, for example, Oldenberg's suggestion connecting the Ādityas with the planets,[7] and Hillebrandt's theory that the whole Rik is centred round a lunar cult.[8] But these hypotheses really relate to the remote origins of the Vedic deities and have but little direct bearing on the characteristics of these deities as conceived by the Ṛishis. From our point of view is seen the importance of the fact that in the Rig Veda none

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[1] Oldenberg deems that every trace of solar character is lacking in Vishṇu (MACDONELL *Ved. Mythol.* 39); but in the Purānas at least, some relationship is indicated, e.g. "The sun, which is the internal unchanging light, is supremely a portion of Vishṇu; and its supreme stimulator is the utterance OM." *Vishṇu Purāna* ii, 8.

[2] A. A MACDONELL *Ved. Myth.* 53. Attempts to identify them with the sun and moon have been made.

[3] Nearly all the references to Sūryā connect her with the Aśvins, as mounting their car, and she appears to be their joint wife. Once she is connected with Pūshan (RV vi, 58[4]), and (?) once with the moon (x, 85).

[4] See, however, the reference to Hillebrandt's view in the next paragraph. [5] e.g. RV x, 85[2-5]. [6] vii, 81[3]; xi, 6[7].

[7] Oldenberg suggests that Mitra, Varuṇa and the Ādityas are the sun, moon and planets, and that these had been borrowed from the Semites or Sumerians, or had received their astronomical character from them. *Die Religion des Veda*, 185 f. See also O. SCHRÄDER in *ERE* ii, 36.

[8] *Vedische Mythologie* (Band i. Soma und verwandte Götter). See also A. A. MACDONELL *Vedic Mythology*, p. 113.

of the gods except Sūrya shows hardly any astronomical traits: any astronomical connexion there may have been has become obscured. Consequently from the Vedic deities of this type we may not derive the post-Vedic and mediaeval astronomical gods of India.

6. Of Vedic ritual specially applicable to Sūrya there is no information; but, as all the gods were worshipped so, no doubt, was Sūrya, possibly with appropriate ritual "Adoration to Sūrya ....celebrate the rite[1] enjoined by him and sing his praise." (RV x, 37[1].)

Post-Vedic.

7. Between the Vedas and any subsequent body of Indian literature there is probably a big time-gap. At any rate the intervening period sufficed to alter considerably the general conception of the celestial deities. In the Atharva Veda there are indications of the coming change. In the Brāhmaṇas[2] the Ādityas are twelve and represent the twelve months of the year. Later the whole group became merged into one sun-god. named indiscriminately Sūrya, Savitṛi, Mitra, Aryaman. Pūshan, etc. In the Upanishads the sun is of great importance.[3] In the epics a sort of heliolatry is indicated:[4] the Mahābhārata gives 108 names of the sun:[5] the Rāmāyaṇa devotes a canto to his praise.[6] The Jātkas[7] also refer to the worship of the sun; the Purāṇas relate solar myths, tell of a race of solar kings[8] and give in outline the ritual of sun worship that still obtains.[9]

8. Already there are indications of two conceptions of the solar deity that were, possibly, independent of each other or even fundamentally antagonistic—the one being purely Hindu and the other of foreign origin or largely influenced by exotic cults. In Hinduism the sun "is blended so inextricably with the

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[1] The rendering, however, is not certain.

[2] ŚB vi, 1, 2^8; xi, 6, 3^3.

[3] Satyayajña Paulishi meditates on the sun as 'the self' (*Ch. U.* iii, i^1). "That golden person who is seen within the sun....is the lord of all the worlds" (*Ch. U.* 1, 6^{5-8}). Chapter iii of the same Upanishad is a meditation upon the rays of the sun, etc. See also the Kaushītaki Upanishad ii, 7, etc., etc. [4] vii, 82^{16}. [5] iii. 3.

[6] vi, 106. Agastya says—"O mighty Rāma, listen to the old mystery by which thou wilt conquer all thy foes in the battle. Having daily repeated the Ādityahṛidaya, the holy prayer which destroys all enemies, gives victory, removes all sins, sorrows and distress, increases life, and which is the blessing of all blessings,—worship the rising sun and the splendid sun, who is respected by both gods and demons, who gives light to all bodies and is the rich lord of all the worlds, etc., etc."

[7] See nos. 159, 534, etc. Ed. E. B. Cowell.

[8] Compare the official cult of the *Sol invictus* instituted by Aurelian (A.D. 270-275) and its connexion with the worship of the Emperors. The Chiefs of Udaipur, Jodhpur, Jaipur and Sirmūr claim to be of the 'solar race.' [9] VP ii, 11, etc.

conception of Brahma, beginning with the famous Gāyatr stanza,[1] as to justify the statement that there is scarcely any theosophic hymn which does not more or less distinctly, primarily or secondarily, have in mind the great heavenly body." On the other hand a solar cult of a more practical kind, which found plenty of justification in the Vedas, but which was probably not altogether indigenous, was in vogue in northern India for a fairly long period.

Astronomical Myths.

9. Some of the astronomical myths show Vedic origins but most of them belong in spirit to the epic age and some of them show no Vedic relationship at all.[2] The most important of these myths naturally relate to the sun and moon; but, judged by the references in popular literature, by far the best known were those relating to Rohiṇī[3] and Rāhu.[4] In very brief outline the more important myths are as follows:—

The Sun (Sūrya) married Sañjñā, but his light was so overpowering that she gave him Chhāyā (Shadow) as a handmaid. Sañjñā retired into a forest and assumed the form of a mare, but Sūrya, as a horse, discovered her. Among their offspring were the two Aśvins. Sañjñā's father, in order to reduce the Sun's power, placed him on a lathe and cut away an eighth part. From the fragments cut off were produced the discus of Vishṇu, the trident of Śiva, the lance of Kārttikeya, etc. The sun was also a great scholar: he taught the Vedas[5] to Yājñavalkya,[6] and to Maya the system of the planets.[7]

The Moon (Chandra), of doubtful parentage, married the 27 daughters of Daksha, that is the 27 nakshatras. Rohiṇī (usually identified with Alddebaran) was the favourite, and the others in their jealousy appealed to Daksha, who punished the moon with the disease of consumption, which was afterwards mitigated to the extent of making it periodical only: hence the waning and waxing. A second lunar myth[8] relates that the Moon carried off Tārā, thereby causing a wide-spread

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[1] The Gāyatrī (RV iii, 62[10]) is really a Savitṛi mantra, and it is doubtful whether it originally referred to the sun.

[2] The only Vedic solar myth relates that Indra stole Sūrya's wheel. RV i, 75[4]; iv, 30[4].

[3] e.g. "For blest with Rāma's love is she, As with the Moon's sweet Rohiṇī." Vālmīki's *Rāmāyaṇa* ii, 16.

[4] e.g. "Like the fair moon from Rāhu's jaws set free." *Mṛichchhakaṭikā* iv. See also *Jātakas* nos. 25, 481, 490, 537; *Rāmāyaṇa* ii, 4, 114; iii, 27, 37, 64; iv, 22; vi, 71, etc.

[5] cf. "Thus the adorable sun, whose self is the Veda, who abides in the Veda and whose self is Vedic knowledge, is called the supreme soul." *Mark. Pur.* cii, 20.

[6] Albīrūnī *India* i, 129.

[7] *Sūrya Siddhānta* i, 1 f.

[8] VP iv, 6, etc.

quarrel among the gods. Budha (Mercury) was born to Tārā and the Moon; and from Budha sprang the lunar race.

Mars is said to be the son of Śiva, and is sometimes equated with Kārttikeya, who was also the son of Śiva. Kārttikeya is the god of war and rides a peacock and carries a bow and arrows. He was fostered by the Kṛittikās (? the Pleiades) and hence his name.

Mercury is Budha ('wise') and the son of the Moon and Tārā; Venus (Śukra, 'brilliant') is the son of Bhṛigu; Jupiter is Bṛihaspati or 'Lord of prayer'; Saturn (Śani), the son of the Sun and Chhāyā, always has a malignant influence. Of these four planets no specially significant myths are related.

Rāhu, a semi-reptilian monster, stole and drank some of the *amṛita* of the gods and so became immortal. Vishṇu thereupon struck off his head, but, as he had secured immortality (for his head at least), Rāhu was placed in the heavens. It is said that Rāhu's theft of the *amṛita* was discovered by the Sun and Moon and that in revenge he occasionally swallows them and thus causes eclipses. The myth is, possibly, partly exotic. Astronomically Rāhu became the moon's ascending node, and Ketu, a later introduction, the descending node. There is some confusion in modern texts: Rāhu was called Kabandha, 'headless,' but the introduction of Ketu as *Cauda Draconis* made this nomenclature anomalous.

According to Jacobi, Garuḍa was a sun-god.[1] Vinatā, a daughter of Daksha, impatiently opened one of her eggs. It contained a bird (Aruṇa) whose upper half only was developed. Aruṇa became the charioteer of the sun. Vinatā's second egg produced Garuḍa, an enormous bird. He became the servant of the Nāgas, who, however, promised to set him free if he procured for them the *amṛita*. Eventually he vanquished the guardian gods and procured it, in spite of Indra, whose thunderbolt (*vajra*) caused the loss of only one feather. On the ground strewn with *kuśa* grass Garuḍa placed the *amṛita* and invited the snakes to partake of it. While they bathed, Indra, who had become friendly with Garuḍa, carried off the *amṛita*. Garuḍa was rewarded by Vishṇu who chose him as his *vāhana*, and gave him his standard to rest upon.

There is a quasi-astronomical myth based upon RV i, 71 (and AB iii, 33[5]), which becomes a star picture embracing Sirius, Orion's Belt and Aldebaran. The Taittirīya Brāhmaṇa gives a star picture of Prajāpati, and the Bṛihat Saṁhitā (lviii, 105) gives a *nakshatra purusha*,[2] which is obviously derived from the *kāla purusha* ('time man')—a human figure

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[1] *ERE* ii, 804. It is doubtful, but the myth is given because of its similarity with the Rāhu myth.

[2] See also the *Matsya Purāṇa*, ch. liv.

made up of all the signs of the zodiac—given in the Bṛihaj-jātaka (i, 4).

Mediaeval Solar Cults.

10. There is abundant evidence, dating from the early years of the Christian era, showing the practice in mediaeval India of a solar cult, and to a more limited extent of a planetary cult also. Philostratus mentions[1] a temple of the sun at Taxila; Yājñavalkya and Varāha Mihira give details of ritual;[2] Yuan Chuang refers[3] to the sun temple at Multan and to the offering of flowers and perfumes to the image of Sūrya there, and Albīrūnī also mentions[4] the same temple, of the founding of which there is an account in the Bhavishya Purāṇa.[5] Ānanda Giri, a writer of the ninth century, counted six formal divisions of sun worshippers, of whom some worshipped the rising, some the setting, and some the noon-day sun, others all three as tri-mūrti.[6] The earliest known Indian inscription referring to this cult is dated A.D. 466, but from that time onward there is plenty of evidence of this type.

The following are brief quotations from some of the earlier inscriptions: (*a*) "May that Sun....whom Brāhmans of enlightened minds, according to due rite.....to be applied to a lamp for the divine Sun."[7] (*b*) "May that Sun protect you who is worshipped by the host of gods for existence, and by the Siddhas who wish for supernatural powers....who is the cause of the destruction and the commencement of the universe. Reverence to that Sun whom the Brāhmanical sages....failed to comprehend, who nourishes the whole of the three worlds; who, when he is risen, is praised by Gandharvas, gods, Siddhas, Kinnaras and Naras, and who grants desires to those who worship...."[8] (*c*) "Let it be known to you that this village is given by us..to the holy Āditya....with libations of water, to be enjoyed as long as the moon, the sun, and the planets endure....."[9]

11. Evidence of another type occurs in a work on astronomy. The best known of the mediaeval text-books of this science in India, the Sūrya Siddhānta, gives the following interesting account of its own origin:—

"When but little of the Kṛita age was left,[10] a great Asura named Maya[11] became desirous of knowing this mysterious,

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1 *Life of Apollonius of Tyana* ii, xxiv. 2 See paragraph 13.
3 Beal vol. ii, 274-275. 4 *India* i, 116. 5 Ch. cxxxix.
6 W. Hopkins *Religions of India*, 447. For a solar tri-mūrti image see H. K. Śastri *South Indian Images of Gods and Goddesses*, fig. 144.
7 Indor inscription of Skandagupta, A.D. 465-466. CII iii, 71.
8 Mandasor inscription of Kumara Gupta, A.D. 473-474. CII iii, 87.
9 Ragholi plates of Jayavardhana ii (Balaghat) EI ix, 47.
10 i.e. some 2,000,000 years B.C.
11 Possibly the Avestan Ahura Mazda is meant.

supreme, pure and exalted science—the chief Vedāṅga—in its entirety: the cause, namely, of the motion of the heavenly bodies.

"He performed in propitiation of the Sun very severe religious austerities. Gratified by these austerities and rendered propitious, the Sun himself delivered unto that Maya who besought a boon the system of the planets.

"The blessed Sun said: 'Your intent is known to me and I am gratified by your austerities. I will give you the science on which time is founded, the grand system of the planets. No one is able to endure my brilliancy. For communication I have no leisure.[1] This person, who is a part of me, shall relate to you the whole. Go therefore to the city of Romaka where you reside. There, undergoing incarnation as a barbarian, owing to a curse of Brahma, I will impart to you this science.'"[2]

Geographical Distribution.

12. The geographical distribution of the temples devoted to the worship of the sun is noteworthy. Most of those of which we now have any record were situated in the north-west of India—from Kāthiāwād to Taxila; but there are remains also in upper Bengal and Orissa. In South India only one, in Tanjore, is known. Images of Sūrya are much more numerous but cover much the same ground. Sculptures of the nine planets are more rare but occur in the same parts of northern India, and at Kolhapur is a so-called Navagraha temple. The Śaiva temples of South India are said often to contain images of the planets, but definite records, except for a set at the temple in Tanjore already mentioned, are lacking. Besides these monumental remains there are inscriptions which naturally occur in the same localities, the most interesting being at Gwalior and Bulandshahar. The most notable centres of sun (and planet) worship appear to have been at Mudhera in Gujarāt, Osiā and Sirohī in Rājputāna, Multān in the Punjab and Konārak in Orissa. The (?) solitary South Indian sun temple is at Sūryanārkovil in Tanjore.

There is also faint evidence of a separate lunar cult in India. Certain coins of the Kushān rulers of the second century A.D. bear images of a moon-god, and there is also the Paurāṇic tradition of a lunar race of kings.[3]

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[1] When Yājñavalkya importuned the Sun to teach him the Vedas, the Sun said: "How is that possible as I must perpetually wander?" Albīrūnī *India* i, 129.

[2] Whitney thinks the last verse is an interpolation, but it is found in many of the manuscripts.

[3] The chiefs of Karauli and Jaisalmer claim to be of the 'lunar race.'

Mediaeval Ritual.

13. The Yājñavalkyasmṛiti, which was possibly composed in the fourth century of the Christian era, contains directions for the worship of the planets:

> "Those desirous of prosperity or desirous of peace should worship the planets. For rain, for long life, for nourishment act in the same way. The Sun, Moon. Mars, Mercury, Jupiter, Venus, Saturn, Rāhu and Ketu should be remembered as planets.
>
> "The planets should be offered copper, crystal, red sandal, gold, silver, iron, lead and bronze in order. They should be marked on a board in their own colours in circles by sandal-wood, or their several colours should be indicated by pieces of cloth or flowers. Also perfumes, garlands and incense of *guggulu* should be offered, and oblations should be made with mantras."

Then are indicated the appropriate mantras, which have a very special interest as obviously they were considered the most suitable of the Vedic texts for the several planets. The connexion, except in the cases of the Sun and Moon, and perhaps Jupiter, is generally merely a matter of some verbal similarity: for example the Budha (Mercury) mantra begins with *udbudhya, etc.*, i.e. "Wake up, etc." The following translations are taken from Griffith's edition of the White Yajur Veda.

The Sun—"Throughout the dusky firmament advancing, laying to rest the immortal and the mortal, borne in his golden chariot he cometh, Savitṛi, God, beholding living creatures." (WYV xxxiii, 43; RV i, 35^2.)

The Moon—"Gods quicken me that none may be my rival for domination, mighty lordship, me son of such a man and such a woman, of such a tribe. This is your king, ye tribesmen: Soma is lord and king of us the Brahmans." (WYV ix, 40.)

Mars—"Agni is head and height of heaven, the master of the earth is he. He quickeneth the water's seed." (WYV iii, 12; RV viii, 44^{16}.)

Mercury—"Wake up, O Agni, thou, and keep him watchful. Wish and fruition meet and be together. In this and the loftier habitation be seated, All-gods, and the sacrificer." (WYV xv, 54.)

Jupiter—"Give us, Bṛihaspati, that wondrous treasure, that which exceeds the merit of the foeman, which shines among the folk effectual, splendid, that son of law which is might refulgent: taken upon a base art

thou. Thee for Bṛihaspati—This is thy home. Thee for Bṛihaspati." (WYV xxvi, 3; from RV ii, 23^{15}.)

VENUS—"Prajāpati by Brahma drank the essence from the foaming food, the princely power, the pure bright drinking off of juice. The power of Indra was this sweet immortal milk." (WYV xix, 75.)

SATURN—"May the celestial waters, our helpers, be sweet for us to drink, and flow with health and strength for us." (WYV xxxvi, 12; see also RV x, 9^{4}.)

RĀHU—"What succour will he bring to us, wonderful, ever prospering friend? With what most mighty company?" (WYV xxvii, 39; RV iv, 31^{1}.)

KETU—"Thou, making light where no light was, and form, O men, where form was not, wast born together with the dawns." (WYV xxix, 37; RV i, 6^{3}.)

14. Varāha Mihira (6th cent. A.D.) also gives[1] a faint outline of ritual. His directions are as follows:—

"The Sun and Mars should be worshipped with red flowers, sandal paste, the *vakula* flower, and gifts of copper, gold and oxen to Brahmans. The Moon should be worshipped by the gift of a white cow. Venus should be worshipped with white flowers, and by gifts of silver, and sweet and nutrititious things. Saturn should be worshipped by gifts of black substances; Mercury by the gift of gems, silver and with the *tilaka* flower. Jupiter should be worshipped with yellow flowers and by the gift of yellow substances."

ICONOGRAPHY.

15. Besides the sculptures that have been preserved there is a certain amount of information relating to planetary imagery recorded in the Purāṇas, in the early astrological works, and in the modern *paddhatis* or manuals of ritual, and *pañchāṅgas* or almanacks.

Separate sun images occur and these are not necessarily connected with the planetary group. These sun images are often very elaborate and exhibit, besides the sun-god himself, a number of attendants.

The whole set of the nine planets, the *navagraha*, is, in early examples, generally shown in relief on a rectangular stone slab, which often formed a temple lintel. Except in the cases of Rāhu and Ketu each planet is shown as a human figure—all of them, including the Moon and Venus, being

[1] Bṛihat Saṁhita civ, 47.

males.[1] To some extent the several deities are differentiated by (*a*) the symbols or weapons held in the hands, (*b*) the *vāhanas* or 'vehicles,' (*c*) colours, (*d*) materials, (*e*) special symbols, (*f*) position, (*g*) dress, pose, etc.

In the earlier examples the vāhanas are seldom, if ever, shown. Possibly the images were sometimes coloured, but evidence is generally lacking.[2] The special materials were probably only employed in actual worship in connexion with the symbols which represented the planets. The arrangement of the planets in sculpture is generally the week-day order as shown in the tables below, with the sun on the left[3]; but in certain ceremonies they (or their symbolic substitutes) are often arranged in some such circular order as is indicated in column F of the table below. The early sculptural representations therefore give us evidence only with reference to the weapons and symbols in the hands, pose, dress and order. Modern representations, pictorial principally but occasionally in brass and stone, show also the different vāhanas, etc. The symbolism becomes more complicated with the advance of time, and except in the cases of the Sun, Rāhu and Ketu is now much obscured—the Moon, Mars, Mercury, Jupiter, Venus and Saturn being in many representations almost characterless in their similarity.

In the case of the Sun, besides abundant sculptural evidence, we have Varāha Mihira's explicit directions for its imagery.[4] "The Sun ought to be made," he says, "with large nose, forehead, legs, thighs, cheeks and breast. In adorning the image the method adopted in the northern countries should be followed. From breast to feet should be covered. He should hold a lotus in each hand, wear a diadem and a necklace; he should be adorned with ear-rings, and a girdle (*avyaṅga*) should be about his waist."

16. Certain details connected with the group of planets are now given in a summary form.

The hands. The symbols, weapons, etc. placed in the

---

[1] But see *Bṛihajjātaka* ii. 6. where the Moon and Venus are, for astrological purposes, considered as female. In India, however, these, *as deities*, are always male; although there are cases on record where Europeans have wrongly described the Hindu Venus as female. Mr. A. Stirling, in 1825 (*Asiatic Researches* xv, 232) described a Konārak sculpture of Venus (figure) as that of 'a youthful female, with a plump, well rounded figure'; and Sir W. W. Hunter (*Orissa* i, 293) repeats this curious error. More recently, in *Bengal Past and Present* (vii, p. 68) is a drawing (not a photograph) of a navagraha slab that appears to give Venus a female form.

[2] The Multan Sun image was, according to Albīrūnī, covered with red leather. (*India* i, 116.)

[3] In one case at least (Cal. Mus. no. 4182) they are in the inverse of this order.

[4] Bṛihat Saṁhitā lviii, 47.

hands of the planetary deities vary considerably in modern representations. The practice of giving four arms to each deity is exhibited in none of the early sculptures, but the Matsya Purāna (Ch. XCXIV.) gives four hands to all except the Sun, Moon and Ketu.

In most cases the Sun carries a lotus in each hand: in northern images the lotus is often full-blossomed,[1] while in the images of Southern India it is said generally to be only half open. Also the northern images sometimes place the hands level with the waist, while in the southern figures they are often raised to the shoulders.[2]

There is little consistency in the cases of the other planets, but in several early sculptures Rāhu is shown with huge outspread hands (figs. 2, 3, 4). The pitcher and rosary occur pretty often (figs. 2, 4, 5): the Konārak and Jāgeśvar sculptures give these to each planet except the Sun, Rāhu and Ketu. Mercury in some early cases holds an arrow and has a bow at his side (figs. 2 and 3), and Saturn holds a staff or standard (figs. 2 and 3). Rāhu appears to hold a vajra in each hand in one case (Konārak) and in another a vajra is placed beneath him (fig. 3). The numerous weapons etc., as given in modern pañchāṅgas, appear to have little traditional warrant.

MANUAL SYMBOLS.

	SUN	MOON	MARS	MERCURY	JUPITER	VENUS	SATURN	RĀHU	KETU
Agni Purāṇa (li)	Sword	Rosary, Pitcher	Rosary, Spear	Bow	Rosary, Pitcher	Rosary, Pitcher	Girdle of bells	Half-moon	Sword, Torch
Matsya Purāṇa (xcxiv)	Lotus	Club	Lance & Club	Sword, Shield & Club	Staff, Rosary & Pitcher	Staff, Rosary & Pitcher	Lance, Bow & Arrow	Sword, Shield & Spear	Mace
Sculpture Cal. Mus. no 4168 (Fig. 2)	Lotus	Rosary, Pitcher	Rosary, Spear	Bow, Arrow	Rosary, Pitcher	Rosary, Pitcher	Rosary, Standard		

[1] See figures 1, 2, 4 and 5, which are all northern.

[2] T. A. Gopinatha Rao says: "The South Indian figures of Sūrya have, as a rule, their hands lifted as high as the shoulders, and are made to hold lotus flowers which are only half blossomed....The northern images, on the other hand, have generally their hands at the natural level of the hips or the elbows." *Elements of Hindu Iconography*, p. 311. But the Almora sculpture (figure 4) does not altogether support this statement, and neither does figure 2.

	SUN	MOON	MARS	MERCURY	JUPITER	VENUS	SATURN	RĀHU	KETU
Konārak (Fig. 5)	Lotus	Rosary, Pitcher	Rosary, Pitcher	Rosary, Pitcher	Rosary, Pitcher	Rosary, Pitcher	Rosary, Pitcher	Vajra	Rosary, Torch
Modern	Lotus	Lily	Staff, Pitcher		Rosary, Pitcher	Rosary, Pitcher	Staff, Pitcher		
Paddhatis & Pañchāṅgas	Lotus			Trident				Half-moon	Rosary, Sword, Shield, Flag

Vāhanas.—Except in the case of the Sun the vāhana appears to be a matter of fairly modern fashion. The Sun has a chariot, sometimes with one wheel only,[1] drawn by seven horses. In one very early case there are, in the Greek fashion, only four horses[2]; and modern examples often show a single horse with seven heads. According to the Agni Purāṇa (li) the Sun may be represented alone on a horse and there are such examples at Konārak. The Purāṇas generally give a chariot with eight or ten horses to each of the other planets, but the modern practice is to give to each a distinct vāhana. A Lucknow Museum relief (fig. 3) shows beneath the planets in order—a horse, a bird with an animal's head, a peacock, a boar (?), a bird with a horse's head, a frog (?), a horse, a vajra.

Colours. There is fair unanimity regarding the colours but that of Mercury is somewhat doubtful. In the west also specific colours were allotted to the several planets.

	SUN	MOON	MARS	MERCURY	JUPITER	VENUS	SATURN	RĀHU	KETU
Garuda Purāṇa (xxxix)	—	White			Yellow	White	Black		
Matsya Purāṇa (xcxiv)	Lotus colour	White	White hair	Yellow	Yellow	White	Green	? Blue	Smoky
Varāha Mihira[3]	Red	White	Very red	Green	Yellow	White or blue	Black		
Paddhatis	Red	White	Red	Yellow	Yellow	White	Black	Black	Smoky
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ptolemy			Red	Variable	White	Yellow	Black		

[1] G P xxxix ; AP li ; Cal. Mus. 5927, etc.
[2] Arch. Sur. Report, 1908-9, pl. li ; R. Mitra *Buddha Gaya* pl. l.
[3] *Bṛihat Saṁhitā* civ, 47 ; *Bṛihajjātaka* ii, 4-5.

Materials.—As in the west the materials allotted depend principally on their colours, but the Hindus did not confine the selection to metals altogether.

	SUN	MOON	MARS	MERCURY	JUPITER	VENUS	SATURN	RĀHU	KETU
Varāha Mihira [1]	Copper	Gems	Gold	Alloy	Silver	Pearls	Iron		
Yāj. Val. Smṛiti	Copper	Crystal	Red sandal	Gold	Gold	Silver	Iron	Lead	Bronze
Paddhatis	Copper	Crystal	Red sandal	Gold	Gold	Silver	Iron	Lead	Bronze
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greek	Gold	Silver	Red iron	Tin	Yellow electron	Copper	Lead		

Special Symbols.—The actual images are sometimes replaced by pieces of cloth of the appropriate colour or by pieces of metal of certain shapes or with certain designs engraved upon them. These symbolic designs are of interest as they appear to have some affinity with the western symbols : they are enumerated in the table below.

Dress, etc.—In some early sculptures, e.g. figs. 2 and 4, the Sun and Mercury are distinguished by special head dresses. In one case that of Mercury is particularly noteworthy (fig. 2). In northern images the Sun often wears high boots (figs. 1, 2, 3 and 4), a girdle that is supposed to be of Magian origin, and sometimes a sword at his side.

Posture.—In most of the early sculptures the planets are, with the exception of Rāhu and Ketu, standing ; and in some of these cases Mercury is particularly differentiated from the others by standing with legs crossed (figs. 2 and 3). In several examples Saturn is represented as lame (figs. 2, 3 and ? 4) : one of his names is *Paṅgu*, 'the lame,' which is possibly derived from his apparent slow motion. Rāhu and Ketu are sometimes combined in one figure.[2]

The following table roughly summarises the planetary attributes :—

[1] *Bṛihajjātaka* ii, 12.
[2] Lucknow Museum H 100, etc.

	A The hands.	B Vāhana.	C Colour.	D Material	E Symbol.	F Position.[1]	G Special features.
Sun ..	Lotus in each hand.	Car with seven horses.	Red ..	Copper	Circle	Centre	Magian girdle.[4] High boots.[5] Sword.[6] Coat of mail.[7] Attendants.[8]
Moon ..	Rosary & pitcher.	Car with ten horses (Deer)[2]	White	Crystal Gems	Crescent	S.E.	
Mars ..	Rosary & spear	(Ram)[1] ..	Red ..	Red sandal	Triangle	S.	
Mercury	Bow & arrow	Peacock (Lion[3] with trunk).	Green	Gold ..	Arrow	N.E. ..	Stands with legs crossed.[9] Special headdress.[10]
Jupiter	Rosary & pitcher (Book & sword).[1]	(Elephant or swan).[1]	Yellow	Gold ..	Rectangle Lotus[1]	N.	
Venus ..	Rosary & Pitcher (Money bag & book)[1]	(Horse or frog).[1]	White	Silver Pearls	Star Square[1]	E.	
Saturn..	Rosary & staff	(Vulture or buffalo.)[1]	Black	Iron ..	Bow Staff.	W. ..	Lame.[11]
Rāhu ..	Vajra ..	(Lion)[3] ..	Black	Lead..	....	S.W...	Moon symbol.[1] Bearded. Large canine teeth. Nāga hood. Large hands.
Ketu ..	Sword, torch (Flag, shield, spear).[1]	(Vulture)[3] ..	Smoky	Bronze	Flag[1]	N.W...	Nāga tail.

[1] These are taken from modern paddhatis and pañchāṅgas. See also J. Burgess *Indian Antiquary* xxxiii, 1904, p. 61 ff.

[2] *Mṛigaṅka* 'marked with a deer' is a name of the moon.

[3] Matsya Purāṇa ch. xciv.

[4] BS civ, 47.

[5] BS civ, 47 and many sculptures.

[6] AP li; Cal. Mus. 3928, etc.

[7] GP xxxix.

[8] AP li mentions Chhāyā, Kunti, Piṅgala and 'two damsels with chowries'; GP lxxiii mentions Daṇḍa and Piṅgala: see plate i etc., etc.

[9] Cal. Mus. 4617, 4618, etc.; Luck. Mus. H 99; etc.

[10] Cal. Mus. 4617, 4618, etc.

[11] Luck. Mus. H 99, H 100; Cal. Mus. 4182, 4183.

Present Practice—*Sun Worship.*

17. The devotions of the pious Hindu are, to a considerable extent, imbued with a sort of astronomical cult, which includes.[1]

(*a*) The recitation, on awakening, of some such mantra as the following : [2]

> " May Brahmā, Vishṇu, Śiva, the Sun, the Moon, Mars, Mercury, Jupiter, Venus, Rāhu and Ketu make the morning auspicious for me."

(*b*) The recitation of the Gāyatrī and meditation thereon.

(*c*) The offering to the Sun of libations of water, accompanied by the recitation of the Gāyatrī and other mantras, e.g.—

> " Salutation to Vivasvat, salutation to the luminous one possessing the energy of Vishṇu. Salutation to the creator of the world, to Savitṛi, the awarder of fruitful deeds." [3]
>
> " Come, O Sūrya, of a thousand rays, the storehouse of all the energy of the world. Have mercy on me the sacrificer. Accept this offering, O maker of day."

(*d*) Worshipping the Sun and reciting, e.g. RV i, 115—

> " The Wonderful host of rays has risen, the eye of Mitra, Varuṇa and Agni, Sūrya, the soul of all that moves or is immovable, has filled the heaven, the earth and the air.
>
> " The Sun follows the divine and brilliant Ushas as a man a woman—at which season pious men perform ancient (ceremonies), worshipping the auspicious for the sake of reward.
>
> " The auspicious swift horses of the Sun, well-limbed, road-traversing, who deserve to be pleased with praise, reverenced by us, have ascended to the summit of the sky, and quickly move round earth and heaven.
>
> " Such is the divinity, such is the majesty of Sūrya, that, when he has set, he has withdrawn what spread over the unfinished work. When he has unyoked his horses from their chariot, then night veils everything in darkness.
>
> " Sūrya in sight of Mitra and Varuṇa displays his form in the middle of the heavens ; and his rays

---

[1] The ritual does not appear to be rigidly fixed but some such practice is followed by orthodox Brāhmans. See S. C. Vidyarnava *Daily Practice of the Hindus*. See also R. E. Enthoven *The Folk-lore of Gujarat* p. 7 ff.

[2] Compare the opening verses of Āryabhaṭa's *Gaṇita*, etc.

[3] Vishṇu Purāṇa iii, 11. Note also that the Sun is present in the person of a guest.

extend on one hand his brilliant and infinite power, or, on the other, bring on the blackness of night.

"This day, O gods, while Sūrya is rising, deliver us from grievous sin. May Mitra, Varuṇa, Aditi, Ocean, Earth and Heaven grant this (prayer)."

The following passage from the Vishṇu Purāṇa (ii, 8) is a naive comment on the practice of sun worship : "The performance of the Saṃdhyā sacrifice must never, therefore, be delayed; for he who neglects it is guilty of the murder of the Sun. Protected thus by the Brāhmans and the Vālakhilyas, the sun goes on his course to give light to the world."

Present Practice—*Planetary Worship.*

18. There is a practice of a different type altogether from that just described. The following details pertain particularly to the ceremony connected with the investiture of the sacred thread. On a small vedi about eighteen inches square a lotus with eight open petals is drawn and each of the petals is smeared with the appropriate colour of the planet to which it is assigned. The celebrant places on the lotus figure in the proper order either images of the planets or pieces of metal, etc. stamped with the appropiate symbols, pieces of coloured cloth, and small heaps of rice, mixed with curds. But first each piece of metal is washed with the *pañch amṛita* to the accompaniment of appropriate mantras. In setting up the planets the *vyāhṛiti* is recited for each and the attendant deities are addressed and placed on the right and left of each planet. Meditation on the form and symbolism of each planet follows and offerings of special food to each are made.[1] The materials for the sacrifice are then consecrated : special fuel for each planet having been gathered and prepared the *homa* is offered with appropriate mantras. Such is the merest outline[2] of a very lengthy ritual to which the greater part of a day is devoted. On other occasions (e.g. marriages), a briefer ceremony is practised.[3]

Influences.

19. Certain evidence relating to sun and planet worship in India has been given in outline. From Vedic times to the

[1] For details as to the symbols, colours, positions, etc. see the tables in § 16.

[2] This brief description is based upon a Kumaon Paddhati. See also the *Matsya Purāṇa* Ch. lxxii and lxxiii.

[3] For references to sun and planet worship among non-Brahman communities see W. Crooke *The Tribes and Castes of the North-Western Provinces and Oudh* i, 109; ii, 185, 421, 460; iii, 112, 132, 247, 311, 378, 436; iv, 88, etc. T. C. Hodson *The Naga Tribes of Manipur*, 169, 170; *The Meitheis*, p. 103, etc.

present day some such worship has obtained, but there have been considerable changes. It is obvious that two types of influence have been at work—one pertaining to pure Hinduism, and the other, as pointed out by Sir R. G. Bhandarkar,[1] of exotic origin. The modern practice of sun worship by the devout Brahman may be traced back to Vedic times, and here the practice is part of the general pantheistic scheme. Planetary worship is probably a foreign importation—possibly of Magian origin, possibly influenced too by the Mithraic teaching that developed to such an extent in the west in the early centuries of the Christian era, and possibly also, to some extent affected by Manichaean practices.

The connexion between Hindu practice and Mithraism is not very marked and probably is evidence only of parallel development, or it may, possibly, indicate some intercommunication. Invoking the sun at dawn, noon and dusk : libations to the planets ; the association of particular colours and metals with them, etc., occur in both schemes Hindu and Mithraic art also have similarities and might be with some profit compared—for example, certain of the attendants of Sūrya with the Mithraic Dadophori, the Indian Navagraha sculptures on lintels with the Bologna bas-relief, etc.,[2] the Mithraic Kronos with certain figures at Konārak, the Srīsailam relief [3] with certain Mithraic sculptures,[4] etc.

For the connexion with Magianism there is more definite information.[5] According to Varāha Mihira the (Indian) Magas were worshippers of the Sun[6]; the Bhavishya Purāṇa gives their history and refers to a Jaraśasta (Zarathustra) as a son of the Sun, and there is a legend of a son of Krishna being cured of leprosy by these Magas;[7] Albīrūnī says:[8] "There are some Magians up to the present time in India, where they are called Maga"; an inscription of A.D. 1137 mentions them[9]; and there are traces of Maga Brahmans in India to-day. In his *Castes and Sects of Bengal*[10] Mr. Nagendra Nath Vasu traces the origin of these Magas and gives some account of their position and influence in India. The several legends he relates

1 *Foreign elements, etc.* Indian Antiquary XL, 1911. 17 *et seq.*

2 F. Cumont *Textes et monuments figurés relatifs aux mystères de Mithra* ii, fig. 99.

3 Arch. Report, Southern Circle, 1917-1918, pl. xvib.

4 Cumont, Figs. 121, 150, 151, etc.

5 See Sir R. G. Bhandarkar *Vaishnavism, Saivism & Minor Religious Systems.*

6 *Brihat Saṁhitā* LX, 19.

7 Cf. II Kings, 5.

8 *India* I, 21.

9 *Epigraphica Indica* ii, 330.

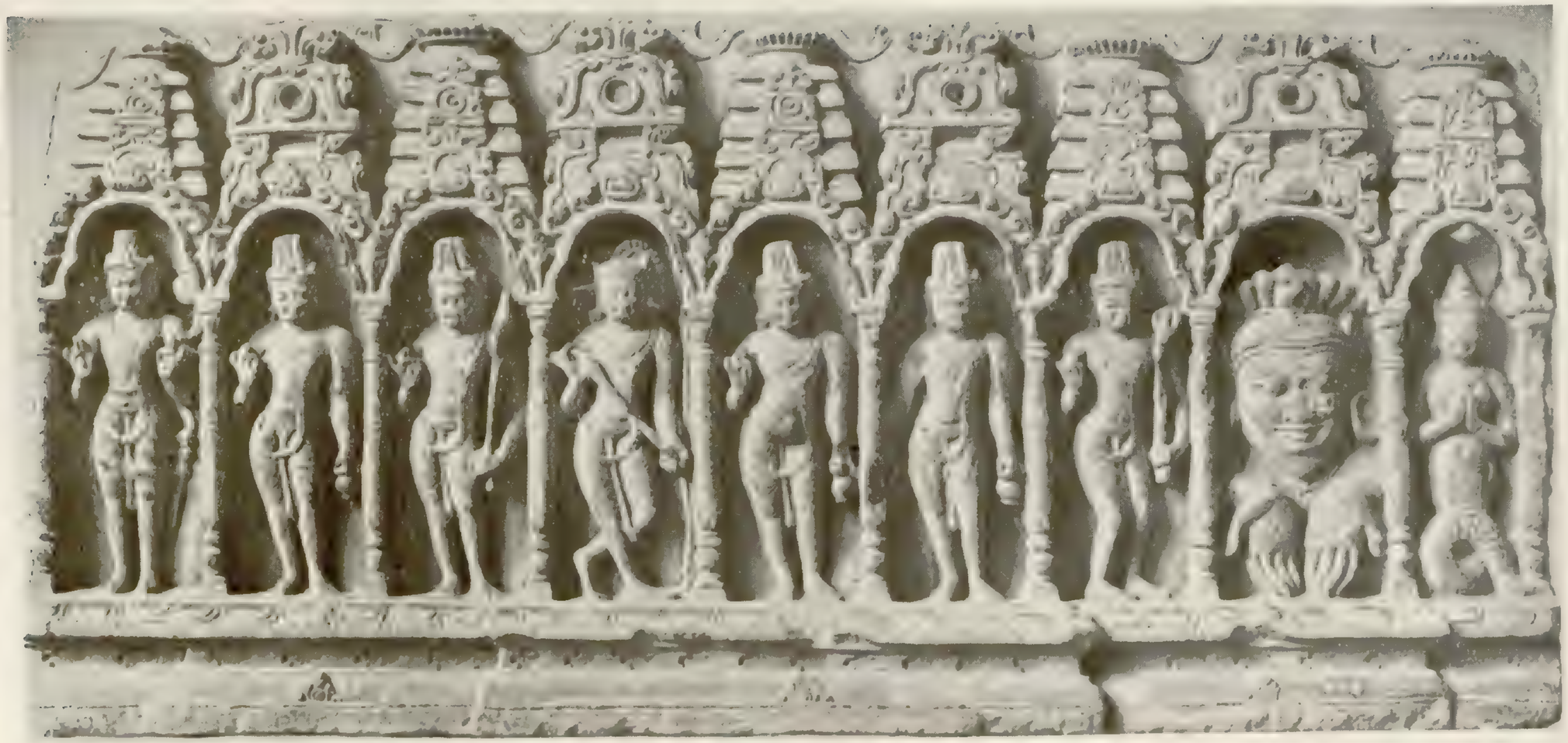
10 Vol. ii, part iv. This is written in Bengali and I am indebted to Mr. Manmathanath Basu, B.A., for a translation of the pertinent sections. See also the *Archaeological Survey of Mayurabhanja*, vol. i, p. ii. *seq.*

overlap to some extent but they are very interesting and are here summarised—(*a*) When Praiyavrata, king of Śākadvīpa, desired to erect a temple and place in it a golden image of the Sun, he brought eight Brahmans, known as Sauryas, from foreign parts. (*b*) The king, after erecting a temple and placing the image of the Sun in it, prayed to the god to provide priests to carry on the worship; and the god created eight Brahmans from the eight parts of his body. (*c*) The Graha Yāmala relates that the eight Muṇis, Mārkaṇḍa, Māṇḍava, Garga, Parāśara, Bhṛigu, Sanātana, Angirā and Jahnu belonged to Śākadvīpa. Their sons, who were planet worshippers, were by the orders of Śrī Krishṇa brought to Sāmbapūr (Multan) by Garuḍa. The descendants of these Śākadvīpī Brahmans and Vaishya women are Gaṇakas. (*d*) Śaśāṅka, king of Gaur, being ill, sent for certain Maga Brahmans from the banks of the river Sarju (Ghogra). By propitiating the planets these Magas effected a cure and they were persuaded to settle in the country, and the planet worshippers (Graha Vipras) are said to be their descendants.

The distinction between the Gaṇakas or astrologers and the Śākadvīpī Brahmans, Graha Vipras or planet worshippers, that Nagendra Nath Vasu elaborates, is interesting. As he points out, the astrologer class is treated with some contempt in the Śāstras, and is generally considered as *apāṅkteya*; but not so the Graha Vipras proper. However, although the differentiation is fairly clear, there must have been a considerable amount of mutual influence at work. In this sketch we have purposely excluded the consideration of purely astrological matters. The history of astrology in India and its connexion with and influence on religious and social practice is a subject for further research.

Fig. 1—Sūrya (The Sun) *Kanārak*

(With the kind permission of Messrs. Johnston & Hoffman, Calcutta.)



Sun Moon Mars Mercury Jupiter Venus Saturn Rahu Ketu

Fig. 2—The Navagraha or Nine Planets. *Calcutta Museum No. 4168*

Fig. 3—The Navagraha or Nine Planets *Lucknow Museum*

Fig 4—The Navagraha or Nine Planets *Jāgeśvar, Almora*

Sun Moon Mars Mercury Jupiter Venus Saturn Rāhu Ketu

Fig. 5—The Navagraha or Nine Planets *Kanārak*

9. NUMISMATIC SUPPLEMENT No. XXXIII.

Note.—The numeration of the articles below is continued from p. 476 of the "Journal and Proceedings" for 1918.

200. The Shah-i-Hind Coins.

For now some fifteen years I have had in my possession eleven insignificant-looking coins, which are yet of interest because of the puzzling questions which they raise. Where were they struck, and by whom?

Seven of the eleven are of a larger denomination, and four of a smaller. All are round, but of a rough workmanship, and some have been badly battered. The diameter of the larger is ·65 inch (but in two cases only ·6 inch), while that of the smaller is ·5 inch.

One of the larger and one of the smaller are seemingly of bronze, but all the others are of copper.

The average weight of the larger is 127 grains, and of the smaller 64 grains.

The dates are as follows:—

Large—937 H. (two), 938 (bronze), 939 (two), 940 (two).
Small—934 H. 938, 938 (bronze), 939.

The legend, which is clearly continuous on the obverse and reverse long defied decipherment for no one specimen contained the whole, so that a part legible on one coin had to be "pieced" with a part that could be read on another.

Happily, however, two of the coins showed an arrangement of the lettering different from that on the rest, which fact naturally helped to reduce the difficulty of deciphering the legend. I should also mention that the late Mr. Framji Jamaspji Thanawala once possessed a beautiful specimen of a type larger than any of mine—it must, I fancy, have weighed at least 260 grains—and with its aid the legend ultimately stood revealed as follows:—

هرکرا روی و رواجي هست بر سطح زمین
سکـــه اقبال شـــاه هند دارد بر جبین

Harkarā rūe wa rawājī hast bar saṭḥ zamīn.
Sikka iqbāl Shāh-i-Hind dārad bar jabīn.

The translation of this distich is somewhat doubtful, but perhaps it admits of being rendered thus:—

Whoever on the surface of the earth has fame and face
Upon his forehead bears the King of India's stamp of grace.

The ordinary arrangement of the lettering is as follows :—

Obverse.

هرکرا
روی و روا ج
بر سطح زمین
هست

Reverse.

سکه اقبال
۹۳۷
هند
شاه
دارد بر جبین

But the variant arrangement (found on 938 small and 939 large, both copper) is

Obverse.

هرکرا رو
هست
واجي
سطح بر زمین

Reverse.

سکه اقبال
۹۳۹
شاه
هند دارد
بر جبین

The legend on the obverse seems to have been circumscribed by a circle, and that on the reverse to have been enclosed in a square.

Mr. M. P. Khareghat, I.C.S. (retired), when recently cataloguing Mr. Thanawala's collection, came across three specimens of the larger denomination. two of them weighing 132 grains each, and one 122 grains. One of the three clearly bears the date 935 and the lettering of all is of the normal arrangement.

Now at what mint were these coins struck? They do not themselves record the mint name, unless, indeed, it be registered in one or more of the reverse margins formed by the sides of the square and the rim. But in none of the specimens hitherto obtained are these margins legible. The dates, ranging from 934-940 H., correspond to A.D. 1527-1533. Who at that period could have ventured upon issuing coins bearing the high-sounding title Shāh-i-Hind? Having regard to their type and make, I am almost certain that these coins are not of the Gujarāt Salṭanat. But Bābur's regnal years are 932-937, and his son Humāyūn's 937-947 and later 962-963; and. if only for lack of any better hypothesis we must, I fancy, assume that it was these two Emperors who caused these coins to be struck. The designation Shāh-i-Hind would, of course, apply equally well to either of the monarchs. My eleven

specimens were all obtained in Gujarāt, so possibly they were altered at some mint in Mughal territory not far remote from the borders of that province.

Mr. Khareghat has ventured to suggest that possibly this coinage was commenced after Bābur had defeated Rānā Sanga (or Sangrām Singh I.) of Mewār in 933 H., and when according to Elphinstone, "Bābur spent the next six months in internal arrangements, and restoring order throughout the provinces that had been disturbed during the doubtful period of his contest with Rāja Sanga" ('History of India,' II, 110), I should not myself be at all surprised should this suggestion prove to be correct.

The same friend has brought to my notice the interesting fact that, if these are indeed coins struck by order of the Mughal Emperors, they furnish us the first instance yet known of the use of verse by the Mughals on their Indian money. Still it is quite possible that these coins were not issued by Bābur and Humāyūn from any mint in Western India; and perhaps some readers of the Numismatic Supplement may be able to advance a more probable explanation of their origin.

GEO. P. TAYLOR.

Aḥmadābād,
Aug. 16*th*, 1919.

Our readers will regret that the above is the last contribution of the Rev. George Pritchard Taylor, M.A., D.D., who died at Aḥmadābād on the 21st February, 1920.

The late Dr. Taylor was an unequalled authority on the mints and coins of the Mughal period. Much of the results of his erudition and industry is embodied in this Journal, to the Numismatic Supplements of which he has contributed no less than thirty-eight papers.

EDITOR.

201. COINS OF THE JAJAPELLA DYNASTY.

In July 1915 Mr. W. E. Jardine, I.C.S., C.I.E., Resident at Gwālior, sent 791 copper coins found in the Gwālior State for examination to the Indian Museum. When these coins were cleaned, they proved to be the issues of the princes called by Cunningham "The Rajputs of Narwar."[1] The hoard discovered at Gwālior consists entirely of that little known type of Narwar coinage, very briefly noticed by Cunningham, a type of which few specimens have since been discovered and discussed.[2] These coins bear a representation of what has been described as the early Chāhamana Horseman (?) on the obverse and a three-line legend on the reverse, containing the name of the sovereign by whom it was issued and the

[1] Coins of Mediaeval India, pp. 89-93. [2] *Ibid.* pp. 92-93, pl. X: 5-10.

date. The coins of Malayavarmman figured by Cunningham belong to this variety. In subsequent years the only recorded discovery of coins of this class is the discovery of 79 coins of Malayavarmman in the Jhānsi District, U.P., in 1908.

The Gwālior find contained 250 coins worthless for numismatic purposes. Among the remainder there were 183 specimens of the issue of Chāhaḍadeva, 211 coins of Asalladeva or Āsaladeva, and 147 coins of Gopāladeva. The figure on the obverse of these coins havs been described by Cunningham as that of an early Chauhān Horseman : but careful comparison of a number of these coins shows that the design is that of the head of a horse, caparisoned, with a small fish in front. The whole design is enclosed in a pair of concentric circles, the space between which is filled with a number of zigzag lines. The design on the reverse consists of two parallel squares, the intervening space being occupied by similar zigzag lines. The inner square contains the three-line legend, consisting of the name of the sovereign and the date in the Vikrama-era. The arrangement of the legend on this side is as follows :—

1. *Śrī-mach = Chā.*
2. *-haḍa-deva.*
3. *Saṁ*.....(Pl. XII, 1.)

Cunningham has recorded the discovery of similar coins of Chāhaḍadeva of the Vikrama years 129 ×, 1303, 1305, 1306 and 1311.[1] The Gwālior find contains coins of this prince issued in the following years :—

(1) 1302 = 1245 A.D. (Pl. XII, 2).
(2) 1303 = 1246 A.D.
(3) 1304 = 1247 A.D. (Pl. XII, 3).
(4) 1307 = 1250 A.D. (Pl. XII, 4).
(5) 1308 = 1251 A.D. (Pl. XII, 5).
(6) 1311 = 1254 A.D. (Pl. XII, 6)
(7) 1312 = 1255 A.D. (Pl. XII, 7).
(8) 1316 = 1259 A.D. (Pl. XII, 8).

The discovery of the fragment of the Rataul grant of the Mahākumāra Chāhaḍadeva rendered possible the assertion that Chāhaḍadeva of Narwar was a Chāhamāna and a lineal descendant of the Chāhamānas of Delhi and Ajmer. The portion of the Rataul grant that has been discovered by Rai Dayaram Sahni Bahadur contains the beginning of the usual Chāhamāna genealogy and so it was quite natural to surmise that Chāhaḍadeva was a lineal descendant of Arṇorāja. I had accepted this explanation and in the report sent to the Resident at Gwālior had described these coins as those of the later Chāhamānas of Narwar. In August 1917 I visited Siprī

[1] Coins of Medieval India, p. 90.

and Surwāyā in the Gwālior State, places which had once been included in the principality of Narwar, with Mr. M. B. Garde, Inspector of Archaeology, Gwālior State, and I had a discussion with him about the origin of Chāhaḍadeva, Malayavarmman, etc. Mr. Garde informed me that his discovery of several new inscriptions in the Gwālior territory has thrown much light on the origin of these princes. For example, a copper-plate inscription of Malayavarmman issued in V.S. 1277 = 1220-21 A.D., discovered at Kuretha in the Gwālior State, makes it clear that he belonged to the Pratīhāra clan. Two stone inscriptions give the desired data about Chāhaḍadeva. At my request Mr. Garde supplied me with a note on the origin of the Rajput princes of Narwar from which I quote the following, with his permission :—

"A stone inscription on a Jain temple at Bhimpur about 3 miles from Narwar dated in V.S. 1319, in the reign of Asaladeva contains the following verses :

Yajvapāla iti sārthakanāmā sambabhūva vasudhā-dhava-vaṁśaḥ.
Sarvataḥ-kaiita-kīrtti-dukulaś = chhatram = ēkam = asṛijat bhūvane yaḥ.‖
Kule kil-āsminn = a janiṣṭha vīra-chūḍāmaṇiḥ Srī-Yaramāḍirājaḥ.
Śūra-chchhidāṁ bhartsita-Tārakaśrīḥ Skando-pi nāskandati yena sāmyaṁ,
Tatra nāka-yuvatī-stana-sthalī-pattra-valli-ghana-daṁvara-spṛiśi.
Chāhaḍaḥ pratinarendra-kānana-plosha-dāva-śikhi-mūrttirudyayau.

The facts of historical importance gleaned from this passage are that there was a race of kings named Yajvapāla; that in that race was born Śri Yaramāḍirāja, and that he was succeeded by Chāhaḍa."

"In another stone inscription found in the *kacheri* at Narwar, dated in V.S. 1339 in the reign of Gopāla, occurs the following text :—

Gamyo na vidveṣi-manorathānāṁ
Rathasyadaṁ bhānumato nirumdhan
Vāsaḥ satām-asti vibhūti-pāttraṁ
ramy-odayo Ratnagirir-gir-īndraḥ
Tattra śauryamayaḥ kaśchin-nirmito maharumḍayā
Jayapālo bhavan-nāmnā vidviṣāṁ dur-atikramaḥ
yad-ākhyayā prākṛta loka-vṛṁdair-
uchchāryamāṇaḥ śuchir-urjita-śrīḥ.
Balavadan-ārjita-kāṁta-kīrttir-
vaṁśaḥ paro-bhūj = Jajapella-saṁjñaḥ
Tatr-ābhavan-nripatir-ugra-tara-pratāpaḥ

Śrī-Chāhaḍas-ttribhuvana-prathamāna-kirttiḥ
Dordaṁḍa-chaṁḍima-bhareṇa puraḥ parebhyo
yen-āhṛtā Nalagiri-pramukhā gariṣṭhāḥ

This passage tells us that Chāhaḍa of Narwar was born in a noble family which was called after a legendary hero named Jayapāla; that the current popular form of the family name was Jajapella; and that Chāhaḍa captured from enemies Nalapura or Narwar and other big towns."

"On combining the information supplied by these two records we learn that the family name of the kings of Narwar hitherto known by the rather generic title 'Rajputs of Narwar' was Jajapella. The alternative form 'Yajvapāla' specified in the Bhimpur inscription appears to be a learned Sanskritised version of the popular form Jajapella. We further learn that Chāhaḍa's immediate ancestor was Śrī-Yaramāḍi-rāja (?Paramāḍi) and not Malayavarmma as supposed by Cunningham. Yaramāḍi-rāja however does not appear to have ruled over Narwar for we learn from the Narwar Kacheri inscription that it was Chāhaḍa who conquered Nārwar from enemies."

Mr. Garde agrees with the late Major Raverty in thinking that Chāhaḍa Āchāri of Ranthambhor was a different personage from Chāhaḍadeva of Narwar. The basis of his argument is the origin of the princes of Narwar. According to the inscriptions discovered by Mr. Garde the Narwar Chieftains belonged to the Jaĵapella clan and were not Chāhamānas by descent. Had the Jajapellas been a branch of the great Chāhamāna clan then the *praśasti* writers would certainly have mentioned that fact. On the other hand the fragment of the Rataul grant of the Mahākumāra Chāhaḍadeva begins with the names of the ancestors of the Chāhamānas of Delhi and Ajmer and therefore it is quite possible that the Chāhaḍa-deva of the Rataul grant belonged to that clan. The legend on the coins of Chāhaḍa of both varieties (the bull and horseman type and the present variety) are written in characters that agree with the script of the Rataul grant.[1] Moreover the testimony of the Gwālior coins combined with that of the Tabaqāt-i-Nāsirī prove that there was a prince of that name in the middle of the thirteenth century A.D. According to the Tabaqāt-i-Nāsirī, three expeditions were sent against Chāhār Deo (sometimes spelt Nāhār Deo):—

(1) In the year 631 A.H. (1233 A.D.) Malik Naṣrat-ud-din Ta-yasai was attacked by Chāhar Deo Rāna of Ājar in a hilly country but the Hindus were defeated.[2]

(2) In the year 646 A.H. (1248 A.D.) Ulugh Khān-i-'Āzam was sent towards Ranthambhor beyond the hilly country of

[1] Coins of Mediaeval India, p. 90.
[2] Tabaqāt-i-Nāsiri (Bib. Ind.), Raverty's trans., p. 733.

Mewāt to attack the territory of Chāhar Deo who is by mistake called Nāhar Deo. In this expedition the kingdom of Chāhaḍadeva was plundered.[1]

(3) In the year 649 A.H. (1251 A.D.) Nāsir-ud-dīn Maḥmūd, the youngest son of Altamsh, advanced towards Gwālior, Chanderi and Narwar. Chāhaḍadeva or Chāhardeo is said to have had 5,000 trained horsemen and two lakhs of footmen. In spite of this force, his forts constructed in the midst of defiles and passes were taken and his territories plundered.[2]

Now the Chāhaḍadeva of Narwar struck coins from the V.S. 129x to 1316. Now if we take the year 129x to be latest possible one, i.e 1299, then Chāhaḍadeva reigned from 1242 A.D. to 1259 A.D. According to the Tabaqāt-i-Nāsirī the Muhammadans waged war against one or more princes of this name from 1233 to 1251 A.D. So it is quite possible that Chāhaḍadeva of Narwar is the prince who fought with the forces of the Sultāns of Delhi on three different occasions. Ranthambhor is not far from Narwar and it is quite possible that both places were under one and the same ruler. It is possible that one of the Jajapellas had married the daughter of a Chāhamāna and therefore the Rataul grant begins with a Chāhamāna genealogy.

The Gwālior find contains coins struck in V.S. 1316 = 1259 A.D. Therefore it is necessary to consider Cunningham's date of the death of Chāhaḍa and the accession of his successor Nṛivarmman. No coins of Nṛivarmman have been discovered as yet, but the date, Saṁvat 1316, on the coins of Chāhaḍadeva proves that Nṛivarmman could not have ascended the throne before 1259 A.D. For some unknown reason Sir Alexander Cunningham assigned a very short reign to Nṛivarmman. He placed the ascension of Nṛivarmman and that of his son Asalladeva in the same year V.S. 1312 = 1255 A.D. This date is untenable now, but the evidence of the Gwālior coins tends to prove that Nṛivarmman did not reign at all, because the reigns of Chāhaḍa and his grandson Āsalla or Āsala overlap.

The Gwālior find contains more than two hundred coins of Asalladeva, but on these coins the name is spelt with a single *la*. Asaladevea is also known from two stone inscriptions :—

(1) The Rai inscription of V.S. 1327 = 1270 A.D.

(2) The Dahi inscription of V.S. 1337 = 1280 A.D.

Cunningham has recorded coins of Asalladeva of the years 1327 and 1330, but the Gwālior find contains coins issued in the years 1315 (Pl. XII, 9), 1318 (Pl. XII, 10), 1319 (Pl. XII, 11), 1322 (Pl. XII, 12), 133x (Pl. XII, 13) and 134x (Pl. XII, 14). There are several coins in the find bearing the name of Asalla

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[1] Tabaqāt-i-Nāsiri, p. 818.

[2] *Ibid.*, p. 691.

deva which were issued in the 12th century of the Vikrama era. Unless one is to admit the existence of another Asalladeva who struck coins of the same type two centuries ago it is difficult to explain the date on these coins in any other way.

Asalladeva was succeeded by his son Gopāladeva, who is known from the inscriptions of his son, Gaṇapati. No coins of this king has been discovered as yet. Gopāladeva's son Gaṇapatideva is known from two stone inscriptions :—

(1) The Surwāyā inscription on the Vikrama era of the Vikrama year 1348 = 1292 A.D. and (2) the Narwar inscriptions of the Vikrama year 1355 = 1298 A.D. The Gwālior find contains 147 issues of Gaṇapati-deva. Cunningham has recorded two dates found on the coins of Gaṇapati-deva, viz. V.S. 1348 and 1355, but the date of the coin of Gaṇapati published by him is illegible (Pl. XII, 15).

Since the writing of this note Mr. M. B. Garde has published his note on the Jajapella dynasty in the Indian Antiquary, Vol. XLVII, 1918, pp. 241-244.

R. D. Banerji.

202. Pratīhāra Gold Coins.

Gold coins of Mahīpāla are found all over India and are usually assigned to the somewhat ethereal Mahīpāla of the Tomara dynasty of Delhi. The coins of the Tomara dynasty are usually of billon and of the bull and horseman type. The coins of Mahīpāla minted in gold are, on the other hand, copies of the gold coinage of the Cedī king Gāṅgeyadeva. It has the king's name in three lines on the obverse and the seated goddess of the Gupta type on the reverse. The form of the *Ha* shows that the coins are earlier than the 12th century A.D. It would be more accurate to assign them to Mahīpāla I of the Gurjjara-Pratīhāra dynasty of Mahodaya (Pl. XIII, No. 1).

R. D. Banerji.

203. Gold Coin of Udayadeva.

The gold coins described in the following lines were found in the Central Provinces. They were described by the reporter as coins of Gāṅgeyadeva. But the three-line legends on the obverse is clearly :—

1. *Śrī-mad* = *U-*
2 *-daya-de-*
3. *-va.* (Pl. XIII, No. 2).

The only prince of this name who ruled in Central and Northern India is the Paramāra Chief Udayāditya, who was a relative of the Cedī king Karṇadeva and for whom we have the certain dates A.D. 1059 and 1080. It is therefore clear that the coin is the only known issue of the Paramāra kings.

R. D. Banerji.

204. Unrecorded Kings of Arakan.

The following coins, belonging to the Cabinet of Mr. Prafulla Nath Tagore of Calcutta, are very important as data for the reconstruction of the history of the ancient Indian kings of Arakan. They prove the existence of four new Indian Kings of Arakan. There is no doubt about the fact that these silver coins were issued by the kings of Arakan, as the recumbent humped bull and the trident-like ornaments are very clear on the obverse and reverse of these coins (cf. V. A. Smith, Indian Museum Catalogue, Vol. I, pl. XXXI. 10). The names of these kings are to be found over the recumbent humped bull on the obverse. The following names are to be added to the list of mediaeval kings of Arakan on the basis of these coins:—

1. Lalitākara (Pl. XIII, No. 3).
2. Ramyākara (Pl. XIII, No. 4).
3. Pradyumnākara (Pl. XIII, No. 5).
4. Antākara or Annākara (Pl. XIII, No. 6).

On palæographical grounds these coins may be assigned to the 10th century A.D.

Another coin purchased with this lot is anonymous and bears no inscription. It has a conch shell on the obverse inside a beaded circle and a symbol on the reverse which resembles to some extent the symbol on the coins described above (Pl. XIII, No. 7).

R. D. Banerji.

205. 'Ālamgīrnagar, a New Mughal Mint.

This small silver coin belongs to the collection of Mr. Prafulla Nath Tagore of Calcutta. It was purchased from a money-changer in Calcutta and has the unique distinction of being the only issue known of Aurangzeb 'Ālamgīr from the mint of 'Ālamgīrnagar. Nawab Mīr Jumlā invaded Assam in 1661. On his way he attacked and overran the kingdom of Koch-Bihār, because Prāṇanārāyaṇa the king of that country had helped Shāh Shujā'.

"Koch-Bihār was thus annexed. The name of the town was changed to 'Ālamgīrnagar. Isfandiyar Beg received from His Majesty the title of Khān and was to officiate as Faujdār of the country till the arrival of Askar Khān, who had been appointed to that office."[1]

"Mir Jumla made his way into Koch-Bihār by an obscure and neglected highway. The advance was very slow, as the dense bamboo groves had to be cleared to make a way. In six days the Mughal army reached the capital (19th December) which had been deserted by the Rajah and his people in terror. The name of the town was changed to 'Ālamgīrnagar.

[1] *Journal of the Asiatic Soc. of Bengal*, 1872, pl. 1, p. 68.

the Muslim call to prayer so long forbidden in the city was chanted from the lofty roof of the palace, and a mosque built by demolishing the principal temple."

'Ālamgīrnagar was in occupation of the Mughals from 1661 to February 1663, and therefore the coin must have been minted in A.H. 1072-73. The legend of the obverse and reverse is very peculiar. It is the only Mughal coin in which the legend is written in Bengali characters, although the language is Persian or rather Arabic. 'Ālamgīrnagar appears for the first time as a Mughal Mint, no other issue of this mint or rather type have yet been brought to light. The coin described above resembles in size, weight, arrangement of the legend and the metal the usual half-rupees issued by the Mahārājas of Koch-Bihār from the time of Lakshmīnārāyaṇa up to the present time, and known in the papers of the Hon'ble East India Company as the Narayani-rupee. It appears that the Mughal Imperial Officers stationed in Koch-Bihār after its conquest by Mir Jumla followed the policy of least resistance by copying the current coinage of the newly conquered Province, changing only the language of the legend but not the script. They thus followed the early Muhammadan conquerors of India such as Sultān Mahmud Ghaznī and Sultān Muhammad bin Sām, who in some cases used Sanskrit legends on their coins.

Obverse.	*Reverse.*
1. *Aora-*	1. *Jarava*
2. *-ṅgajeva vā*	2. *Ālamagi-*
3. *daśāha Āla-*	3. *-ranagara*
4. *-magīra*	4. *Sam* [*vat*]

which is the exact translation of "*Aurangzeb Bādshāh Alamgīr. Zarb Ālamgīrnagar.*" In the last line we have the translation of the word "*sanh.*" (Pl. XIII, No. 8). R. D. Banerji.

206. Gurū-Govinda of Sylhet.

According to tradition Gaur Govinda is the last Hindu king of Sylhet in Eastern Bengal, a province which at the present time forms a part of Assam. No coin or inscription of this prince has been discovered as yet. The date of this king has been fixed according to the tradition of the Muhammadan conquest of Sylhet as recorded in the Suhail-i-yaman. In this work it is stated that Sylhet or Śrī-hatta was conquered by Pīr Shāh Jalāl during the reign of one Sultān Shamsu-d-dīn in 786 A.H. (1384 A.D.).[1] But there was no Sultān Shamsu-d-dīn in 1384 A.D. Therefore it has been surmised that Sylhet was conquered during the reign of Sultān Sikandar-bin-Iliyās who was reigning in 1384 A.D.

[1] Prof. J. N. Sarkar's *History of Aurangzib*, Vol. III, p. 180.

In Mr. V. A. Smith's Catalogue of Coins in the Indian Museum there is a silver coin (pl. XXX) assigned to Visnu-chittadeva of the Kadamba Dynasty of Goa.[1] In a foot-note Mr. Smith records that this and another examined by Dr. Hultsch. but the king's name had not been deciphered fully on either. Pandit B. B. Bidyabinod, Assistant Curator. Archaeological Section, first of all noticed the mistake in the catalogue. The legend on the coin being in ancient Bengali characters. Messrs. Smith and Hultzsch found it difficult to read. I read it at first as *Gunagovindadeva* but Pandit Bidyabinod read it correctly as *Gurugovinda-deva.* In Persian characters it would be written گوو گویند دیو. The second *waw* of Guru seems to have been omitted by a scribe, hence the Suhail-i-yaman has گور گویند. This was transliterated Gaur Govinda.

The coin weighs 37·8 grains and measures ·68" in diameter (Pl. XIII, No. 9). The coin of Rāmagaṅgāmāṇikya of Tippera weighs 162·3 grains. This coin may be taken as a quarter-rupee. It corresponds with the Tippera coinage in many respects, the arrangement of the legend being almost identical. The rampant lion of Tippera appears on the obverse of this coin and below it the date 140 (?) 2, evidently of the Śaka era. Long before the discovery of this date I had assigned the conquest of Sylhet to the reign of Sultān Shamsu-d-dīn Yūsuf Shāh, son of Sultān Rukn-ud-dīn Bārbak Shāh, in the second volume of my History of Bengal.[2] The date on the coin, Ś. 1402 = 1480 A.D., corresponds with 884-85 A.H., and the latest epigraphical date for Sultān Shamsu-d-dīn Yūsuf Shāh is the month of Muharram of the year 885 A.H.[3] So that evidently Sylhet was conquered some time after 1480 A.D. = 884-85 A.H. There is a stone inscription of the time of Shamsu-d-dīn Yūsuf Shāh in the Dargah of Shāh Jalāl in Sylhet: but as this record is partly buried in masonry the date has not been read. Its presence, however, proves that Sylhet was a province of the kingdom of Bengal at some time during the reign of that sovereign.[4] This Yūsuf Shah died in 887 A.H. according to the Tārikh-i Ferishta, the Riyāz-us-salātin and the Tabaqāt-i-Akbari. The inference is therefore that Sylhet was conquered some time between 885-887 A.H. (1480-82 A.D.).

R. D. Banerji.

207. Nisārs of Shāhjahān.

The nisār of Shāhjahān issued from the Akbarnagar mint, published by Lt.-Colonel Nevill in article No. 198 of Numis-

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[1] Catalogue of Coins in the Indian Museum, Calcutta. Vol. I, p. 308, Pl. XXIX, 16.
[2] History of Bengal, Vol. II, p. 216.
[3] Ravenshaw's Gaur, its ruins and inscriptions, p. 55 note.
[4] J.A.S.B. O.S., Vol. XLII, 1873, pt I, p. 277.

matic Supplement No. XXXII closely resembles one acquired by the Provincial Museum, Lucknow, in 1917. The latter is dated 1065–29 and prior to the Nadia find was the earliest known of this mintage.

The coin is figured below. It will be observed that these niṣārs are devoid of the symbol ﷺ on the reverse, which for some reason still unexplained is often found on similar issues from the mints of Āgra, Lāhor and Shāhjahānābād.

K. N. Dikshit.

208. A new Jaunpur mohar of Akbar.

Metal—*AV*.
Size—1 00.
Weight—168 grains.
Date—971 H.
Mint—Jaunpur
Provenance—Lucknow.

Obverse.

Within incused diamond.

لا اله الا الله
محمد
رسول الله

Margin

[السلطان] الاعظم تعلی خلد الله
ملکه و سلطنة

Reverse.

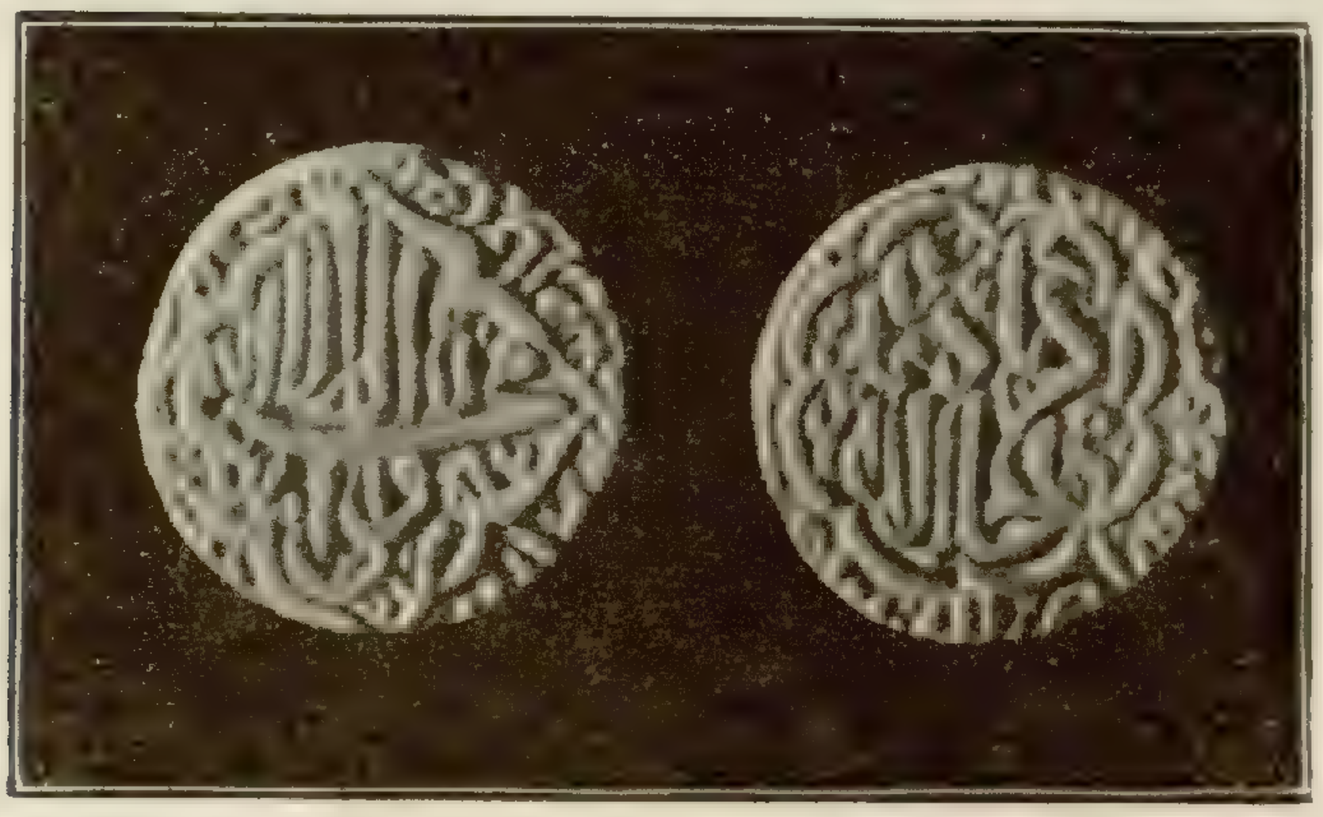
Within eight-foil.

شاه
اکبر باد غازي
محمّد جلال الدین

Margin

ناصر الدنیا و الدین [ابو المظفر]
ضرب جونپور ۹۷۱

The design and execution of this piece are superior in many respects to those of the usual Jaunpur issues. It is noteworthy that the coin bears the same style and title of the Bādshāh as the later coins of this mint, the epithet "Nāṣiru-d-dunyā wa ud-dīn" being characteristic. Mr. Whitehead in his mint notes (P.M.C. p. lxvii) says that 'the gold coins of Akbar [struck at Jaunpur] commence in 972 with broad pieces of good execution.' This coin, which has lately been added to the cabinet of the Provincial Museum, Lucknow, is not only one year earlier but reveals to us a distinct type differing markedly from the well-known broad pieces of Jaunpur.

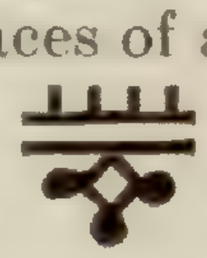


K. N. Dikshit.

209. A new Gold Coin of Chandragupta II.

Metal—*AV*.
Weight—121 grains.
Provenance—Mirzapur, U.P.

Obv.—King, nimbate, standing left; wearing a turban adorned with some ornament above the forehead, coat and trousers and the usual jewellery consisting of ear-rings, necklace (?) and armlets. He holds a bow, with the string outwards, by the middle, in the left hand and an arrow (?) in the right. "*Chandra*" is written vertically to the right outside the string. The marginal legend beginning from the proper left reads *Dēva-śrī-mahā* and forms part of the complete legend *Dēva Śrī Mahārājādhirāja-Śrī-Chandraguptaḥ* found usually on the archer type.

Rev.—Goddess (*Lakshmī*), nimbate, seated facing on lotus, holding a fillet in her outstretched right hand and a lotus with a long stalk in the left. There are traces of a border of dots on the top To the left is the monogram  and to the right the legend *Śrī Vikramaḥ.*

The obverse corresponds with the specimen in the British Museum published as Var. γ[1], but the reverse has a *lotus* instead of a *throne* seat, and as such presents an interesting new variety of the archer type formed by the combination of an obverse and reverse which are known separately.[2]

This coin belongs to the Mirzapur find of 1910 and has not apparently been noticed.

Prayag Dayal.

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[1] *See* Allan, Coins of the Gupta Dynasty, p. 25.
[2] Do. do. Pl. VI, 5 and 10.

COINS OF THE JAJAPELLA DYNASTY.

JOURN., AS. SOC. BENG., VOL. XVI, 1920.

1. Pratihāra Gold coins. 2. Gold Coin of Udayedeva.
3. Unrecorded Kings of Arakan. 4. Ālamgīrnagar. 5. Guru-Govinda.

officers at this time. Hervy drew £40 per annum, Nedham £30, Pownsett £20, and Eyre £10.

In 1682 another chief from Hughly visited Dacca. I refer to Sir William Hedges, whose long and interesting diary has been published, and as his arrival is noted in one of the last entries in the diary below I need not give details of the visit: but I have added a few notes gathered from his diary.

The following extracts from a diary of Sir Streynsham Master relate to Dacca and are interesting:—

1. Accompt charges upon De Soito's[1] business at Dacca, June 1676.

A perticular accompt of the charges of presenting the Nabob and divers other officers and great persons to procure his order to be reversed after it had binn given twice for the payment of De Soito's demands and that Samuell Hervy was committed to custody[2] till execution thereof.

Broad cloth ordinary presents, vizt.

Yards.		
5	To Atcharah (*Achraj*) King's Munshy.	
10	To Bagoandas Mutsudie.	
10	To Sybram ditto	
5	To Mahmood a Shroof,[3] Rang Mahall Mirda (*Sergeant in the Hall of Audience*).	
19½	To Ray Nūndeloll's[4] Porters, Chubdars, etc. for admission at all times to him.	
49½	Estimated in rupees 3 per yard	.. 148-8.

Scarlett presented, vizt.

Yards.		
3¼	To Meiz Tozuck[5] of the Nabob's Rang Mahall.	
3½	To Sybram, Mutsuddie aforesaid.	
6¾	Estimated in rupees 8 per yard	.. 54-

Fine Green presented, vizt.

Yards.		
2	To Meiz Tosuck aforesaid.	
	Estimated 8 rup. ..	.. 16/-
		218-8-0

[1] This had nothing to do with Dacca originally.

[2] This is interesting as being the first occasion on which an English officer was imprisoned by the Nawab. Other occasions were in 1689-90 and 1756.

[3] Muhammad Ashraf.

[4] This is Rai Nanda Lal who figures prominently in Hedge's diary, where he is called "Ye Nabob's Vizier" and "Ye Nabob's Duan": Master calls him one of the craftiest men in the kingdom.

[5] This is Mir Tuzuk or Master of Ceremonies. *Cf.* Hedges:—I was

	Cash, vizt.		
Paid into Nabob's Treasury	..	..	2000/-
Batta [1] of ditto money and other usuall charges.	..	..	30/-
To Mullick [2] Cossim		..	500/-
To the Nabob's wife, paid in her Mahall		..	2000/-
To the eunoch that procured that interest		..	200/-
To Buzzurgh Omeed Chaan, the Nabob's son			1000/-
To Ditto Duan for access and acceptance		..	200/-
To the Cottwall [3] and Ameen [3] of the Citty		..	600
To the Nabob's Jassoalls [4]	..	..	100
To Achrash Munshy, our friend to the Ray [5]			300/-
To Hackim Mahmood Hassim [6]	..	..	500/-
To Ditto Petesdutt	..	..	200/-
To Gourdasse, the Nabob's Arz beague [7]		..	500/-
To Bagoandas Mutsudie	..	..	50/-
Wine, 2 pottles of canary to M. Cossim		..	6-8-0
.. to divers Nabob's rayes and Chubdars			20/-
To the Cozzee [8] and his mushrife [9]		..	600/-
To Chubdars and Mirdaars [10] of the Durbar			150/-
		8911-8-0	9130

2. November 23rd, 1676.

Mr. Hervy representing to the Councell that the Companyes house at Dacca is very streight and not capable to receive and secure the Honble Companyes goods by reason of severall thatcht hovells within and round about the compound which are verry dangerous in respect of fire which often happens in Dacca. The Councell did therefore order that brick buildings be forrthwith erected to secure the Companyes goods not exceeding one thousand rupees for this yeare and that due account be kept of the Perticulars thereof.

3. December 15th, 1676.

Upon the 12th of this moneth there came a letter from Mr. Fitch Nedham at Decca dated the 29th November last advising that there was an order come from the King to the Nabob requiring to take two per cent custome of the English. The Councell having with sorrow considered the ill consequence

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directed by Ye Emir Tusuck or Master of the Ceremonies to sit over against Ye Nabob, nearer Ye Canopy than his Duan or any other person.

[1] Discount.
[2] Malik Kassim, Governor of Hughly.
[3] The chief police and revenue officers.
[4] Jasawal = Bodyguard.
[5] Ray = Ray Nunda Lal.
[6] He was Superintendent of Shipbuilding (see below).
[7] Arzbegi = officer receiving and reading petitions.
[8] Qazi or civil judge.
[9] Officer or inspector.
[10] Mirdha = overseer or sergeant.

thereof, if the King or Nabob should insist any such demand at present they could not think of any how to proceed further than to write to Mr. Hervy who is now upon his way to Dacca that he use all meanes to smooth up Ray nund deloll, the Nabob's duan, by acquainting him that the Persian horses are now upon their waye.

4. Dacca, the 3rd December 1676.

Mr. Streynsham Master, etca, Honoured Friends.

Yours of the 16th, 17th and 22nd of last moneth have received.....James Price [1] hath mett with the Governour of Rajamaulls [2] veekeell and threatened him and showed him a coppy of an old forwane, [3] who hath now promised to write to his master about us that we should have no more trouble there.... ....The Two Phyrwannaes whose coppyes I sent you in my last I have with much trouble and bribing of the Nabob's Cullumdar [4] with 150 rupees and Mella Cassimes [5] with 50 rupees stopped here from this day till seaven daies more before they shall go hence, which I hope you will like off.

(sd) Fitch Nedham.

5. 6th October 1679.

Mr. Hervy, etca, having advised in a letter from Dacca of the 27th of last moneth received yesterday that the Princes [6] duan Hodgee [7] Mahmud is very outrageous towards them upon accompt of 15000/- Rs. which he demands the present payment of and a writeing for the profits thereupon to Persia, which mony Mr. Vincent was forced to receive and to promise to send to Persia upon his accompt when he was at Dacca the last yeare to take out the Princes neshan which was long retarded on that accompt.

6. 9th October 1679.

This day James Price the Companyes Vackeele at Dacca arrived at Hughly with an aidy [8] and a Chupdar from Hodgee Mahmud the Princes duan about the 15000 Rs. sent to Persia for him by Mr. Vincent which by perwanna the duan demanded present payment of, with the profit, and in case it was not presently paid he wrott to the Governour of Hugly, Allee Nucky, to stop all our business.

7. October 22nd 1679.

Received a letter from Dacca dated the 13th instant adviseing that the Prince Sultan Auzam had left the citty on

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[1] See below. [2] Rajmahal.

[3] Parwanna, but forwane might mean Farmān, a decree or order from the Emperor.

[4] Clerk, literally, pen carrier. [5] Malik Kassim.

[6] The Viceroy, Prince Muhammad Azam.

[7] Haji Muhammad, not to be confused with Haji Safi Khan, the Emperor's Diwan.

[8] Ahdi = foot soldier.

the 6th and the 12th began his journey to Rajamaul, that 'twas feared there would have been a generall plunder about the time of the Princes departure but it proved not soe : that Shesta Chaun was made Suba or Governour of Bengale, his son Buzurgh Omeed Chaun being sent his Offtalle[1] or Deputy to take possession of the government and is on his way making great speed to Decca, part of the Arrmado[2] being sent to Pattana for his reception.

8. October 31st, 1679.

Received a letter[3] from Dacca dated the 23rd October.

9. December 10th, 1679.

There came a Phyrwanna from the King's duan at Dacca to the Phosdar here to demand present payment of 11565 Rs from the English, viz 7540 - Rs for guns[4] sold by Mr. Blake about the yeare 1664[5] that were not received at Dacca and 4025 - Rs. for money delivered to James Price the Vackeel in the wars against the Arracannars.[6]

Before passing on to other matters I give below a most interesting account of the method adopted in those days for obtaining cloth for the factory.

" Accompt of the manner of provideing cloth at Dacca.

1 The most proper season for giveing out moneys for Cossaes, Mullmulls, etca. made in and about Dacca is the month of January.

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[1] Abdali or substitute.

[2] This refers to the Nawarra or fleet maintained then and for years later at Dacca.

[3] The following is an extract from that letter : " Of late the Prince's name is almost forgotten and noe discourse are so current as those which magnify Shasteh Caan who will bring hither with him the chiefest officers of this kingdome, his neare relations, vizt., Coda bux, Buxie or Master of the Horse, Mirza Muduffer, Daroga of the Topechanna or Master of Ordinance, Buzurgh Omeed Caan, Suba of Chatgam etca, and one grand employment or other for all other his relations. Only Obood Nosser Chaan his son succeeds him in the Subaship of Agra. Obdull Summutt a relation and formerly gentleman of his horse being appointed his duan and Obood Nossr Chaan was soe. That if it should soe happen that this report be true, as there is little doubt, wee have great hopes of better daies for most of those persons Samuell Hervy is well known to and favoured by, especially Mirza Coda Bux, and Mirza Mudduffer, with whom wee make noe doubt to prevaile for any reasonable matter within their powers."

As regards the Abdus Samad mentioned herein, he could not have been the Nawab's Diwan, as that post was held by Rai Nand Lal although Hedges calls him " Abdell Suma, Ye Nabob's duan." I find him called Nawab's Buxi in two letters to Sir Joshua Child in 1687. He was sent with 2,000 horse against the English at Hughly : this shows that he was more likely to have been Buxi.

[4] In an entry of 1669 we find that these guns were sent to Mir Jumla *per* William Blake and it was supposed the boxes were tampered with.

[5] This must be a mistake as Mir Jumla died in 1663.

[6] The Mugs against whom Shaista Khan sent an expedition.

2. Delolls or Broakers accustomed with and appointed by the Government to the business of cloth take four monethes time for its delivery and within six monethes or there-abouts doe usually bring in the same browne[1] as it comes from the weavers.

3. The said Broakers having tooke money deliver it to the Picars who carry it from Towne to Towne and deliver it to the weavers, so that the only security of the Picars are the weavers, of the Broakers are the Picars and of the Honble Companyes money the Broakers.

4. Browne musters[2] pieces are customaryly brought and their prize agreed on before money delivered though divers Arabians[3] and Mogulls who trade in Dacca cloth (carrying away yearly very considerable quantityes of the same overland some so far as the great Turks dominions) agree at first on noe certain price but receive their goods at the time limited the Delolls or merchants of the Towne then valueing them according to the markett price.

5. When the Honble Companyes cloth is brought in the broakers overlooke, sort and prize it, for which they have afore received of the Picars, by deduction, two rupees on each hundred rupees at which time the Chiefe etca take good care to interfere with their judgements, demanding abatements and allwayes receiving the same (though not according to equal proportion) for want of breadths and lenghths and goodness: but cloth much worse than muster is returned back, provided the broakers are not thought doubtful.

6. What money is agreed to be paid upon abatements, the Delolls usually make good in speciae unless cloth according to muster be procurable.

7. If at any time it happens that the Delolls seem to be partiall in overating the goods a merchant of the citty is, by joynt consent, chosen and desired to determine therein and doth soe accordingly.

8. It may not unfittingly be inquired into whether responsible merchants are not to be found in Dacca who will contract for the Investment as in Ballasore and Hughly, thereby the better to secure the same the broakers being generally poor and litigious and if the Picars or weavers faile, seldome paye their remaynes.[4] but never without contest trouble and charge.

This accompt of the Dacca Investment was given to the Worshipfull Streynsham Master Eqre Etca Councell according to order by me Sam. Hervy.

Dated in Cassambazar, October 16th, 1676."

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[1] Unbleached. [2] Standard samples.

[3] Until the war began the Basaks of Dacca did a large trade in Kasida cloth to Turkey and Arabia.

[4] Balances due

During the expedition into Assam (1662-63) the English apparently supplied guns to Mir Jumla. We read in Manucci of the Englishman Thomas Pratt "who had from Mir Jumla five hundred rupees a month. He was master of the river side and employed in building boats and making ammunition for river fighting."

On Mir Jumla's death in 1663-64[1] the great Shaista Khan was appointed to be Viceroy. His first term of office lasted till 1677. One of his earliest acts was to send his son, Buzurg Amed Khan, with an army and fleet against the Mugs and the Portuguese pirates who infested the Bay. The result was the capture of Chittagong and the settlement of a number of Portuguese[2] in the Dacca district, chiefly at Feringhi Bazar. In 1672 he granted the English an order for freedom of trade throughout Bengal without the payment of any duty.

Fidai Khan, generally called Azam Khan, succeeded Shaista Khan but he died[3] in Dacca the following year. In his place the Emperor sent his third son, Prince Muhammad Azam, at that time Governor of Patna. Before his arrival in Dacca the Government was carried on by the Emperor's díwan, Haji Saphi Khan, who imposed a tariff on English trade. Prince Azam is the person referred to in the diaries of the period as "the Prince."

In return for Rs 21,000 - he gave the English an order (or Nishan) for free trade in Bengal. This was evidently the Nishan obtained by Mr. Vincent.

On the Prince leaving Dacca to assist his father in the wars against the Mahrattas, Shaista Khan was sent again to Bengal. He returned to Dacca in 1679 with a large train of relations and others who were appointed to high offices in the Province. A duty was levied on English trade and Hedges went to Dacca to personally plead the cause of the Company. He left believing that he had obtained remission of this as well of a percentage levied on money coined for the Company. The diaries below are more concerned with the latter than the former, but not because it was the most important. In 1682 the Assamese rebelled and ousted the Moguls from Assam. An expedition sent by Shaista Khan to quell the rebellion proved unsuccessful. It is interesting to note that he punished several of his subordinates by depriving them of their mansabs

[1] Pending Shaista Khan's arrival, Daud Khan, Governor of Patna, was sent to take charge at Dacca.

[2] Apart from this settlement, the Portuguese were well known in Dacca. Mir Jumla took a party of them in his army on the Assam expedition (see Manucci) and Shaista Khan sent a company of 5 or 6 hundred to reinforce his army in Assam, in 1682 (see Hedges' Diary).

[3] During his illness a French doctor was sent from Hughly to attend him. He died in May 1678 (see Hughly Diary, Vol. I).

and he himself was punished by the Emperor by having to pay for the whole cost of the administration of that country from his predecessor's time.

I give below a list [1] of the various officers of the Mahammadan Government at Dacca at this period :

King's Diwan	..	Haji Saphi Khan. Mir Syed Ahmad.
King's Buxi [2]	..	Rahmatulla. Khoda Bux Khan.
King's Munshi	..	Achraj (?)
Nawab's Diwan or Vazir	..	Haji Muhammad Hashim (under Prince Azam). Ray Nanda Lal (under Shaista Khan).
Peshdast of ditto	..	Kashi Das.
Nawab's Buxi [2]	..	Mir Abdulla (under Prince Azam). Khoda Bux Khan (under Shaista Khan). Abdul Samad (ditto. [Azam).
Nawab's Nazir or Controller of the House	..	Mobarrak (under Prince
Daroga of the Topkhana [3]	..	Mirza Muzzaffar.
Daroga at Alamganj [4]	..	Mir Moaz.
Daroga of the Chhapa Mahal [5]	..	Kaji Khusru.
Daroga of the Mint [6]	..	(No name mentioned).
Chief and Kotwal [7]	..	Aziz Beg. Muhammad Hossain.
House Diwan	..	Murlidhar.
Master of Ceremonies (Mir Tuzuk)	..	Muhammad Reza.
Sergeant of the Durbar	..	Muhammad Ashraf.
Munshi	..	Parbal Das.
Peshdast and Chief Mutsuddy	..	Manohar Das.
Cullumbardar	..	Khosal Beg.
Mutsuddy	..	Shib Ram.
? Eunoch	..	Khajah Ambar.

Besides the above several other officials are mentioned some of whom used occasionally to come to Dacca, viz :—

1 Taken from Hedges' diary and the Dacca and Hughly Diaries.
2 Buxi was Master of the Horse.
3 Superintendent of Artillery. (Top = cannon).
4 His duties are not mentioned : he may have been a Customs officer.
5 See note under entry of 31st July 1681.
6 ,, ,, ,, ,, 2nd December 1681.
7 The Chief officer of Police.

Malik Kassim	..	Governor of Hughly.
Bul Chand [1] (Bal Chandra)	..	Chief revenue officer of Hughli and Murshidabad.
Safed Mahmud [2] (son of Haji Safi Khan)	..	Faujdar of Hughly.
Innayatulla	..	Daroga of Hughly.

List [3] of officers under Nawab Shaista Khan at the time of his expedition to Chittagong, 1666 A.D.

Commander-in-chief of the Expedition	..	Buzurg Umed Khan, his son.
Fauzdar of Dacca	..	Aqidat Khan, his son.
Daroga of the Nawara (fleet)	..	(i) Mahmud Beg. (ii) Ibn Hossain, entitled Mansur Khan.
Daroga of the Topkhana (Artillery)	..	Mir Murtaza, entitled Mujshid Khan.
Daroga of Larical [4]	..	Ziauddin Yusuf.
Daroga of Dhapa [5]	..	Muhammad Beg.
Daroga of Sangramgarh [6]	..	Muhammad Sharif,[7] late Faujdar of Hughly.
Superintendent of Shipbuilding	..	Hakim Muhammad Hossain.
Superintendent of Nawara Parganas [8]	..	Kishor Das.
Commander of 2500	..	Ikhtisas Khan.
Commander of 1500	..	Raja Subel Singh Sisadia.
Commanders of 1000	..	Sarandaz Khan. Farhad Khan.[9] Qarawal Khan.

[1] See note to entry of 4th March 1682.

[2] Mentioned by Hedges who saw him several times in Dacca.

[3] Compiled from certain translations by Jadu Nath Sarkar [see J.A.S.B. of June 1906 and June 1907].

[4] See the Journals of Major Rennell (Memoir III (3), A.S.B.). The place has now disappeared.

[5] This was a fort at Fatulla on the Buriganga about 7 miles below Dacca. It is marked on Rennell's map as Daapeka Killa.

[6] This was another fort: apparently on the Megna or Brahmaputra. Shaista Khan built a road from Dhapa to Sangramgarh, This is the old Dacca-Chittagong trunk road which passes through Fatulla and Hajiganj and thence reaches the Megna at Baidya Bazar. In 1794 there was a police thana at Sangramgarh: and in 1798 the forts at Fatulla and Sangramgarh were both mentioned in a statement submitted by the Collector to Government.

[7] Probably the same who was king's Buxi in 1689.

[8] The lands which furnished the revenue for the upkeep of the fleet.

[9] Formerly thanadar of Noakhali.

Officer in charge of the Nawab's Retainers	..	Shaikh Mobarak.[1]
Jamadar of Soldiers	..	Kaiat Khan.
Officer Commanding the Portuguese ..	..	Capt. Moore.
Another Commander	..	Manwar Khan.[2]
Masharif[3] of the Fleet	..	(i) Qazi Samu. (ii) Muhammad Muqim.[4]
The Sadar[5] ..	..	Mir Saiyyid Sadiq.
Diwan-i-bayutat or House diwan ..	..	Khwajah Murlidhar.[6]

Fragment of a diary from 4th October 1678 to 28th October 1678 signed by Sa. Hervey and Fy. Nedham, Dacca.

October 5th: we went to Ye Duans at Chand Chaan's[7] Garden about our Tanksall[8] Phirwana.

(*N.B.—The request was refused as appears in a subsequent entry.*)

Dacca Dyary—April 1681.

1680, Oct. 11th. (*Coda Bux Chaan*) hearing from his brother. Mirza Mudduffer, of the sickness of Mr. Hervy and violent paine which was upon him and brought with him[9] Physick of his own preparing.

October 15th. Azziz Beague,[10] Chiefe and Cottwall here,

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[1] Possibly the Nawab's Nazir or Controller of the household mentioned above.

[2] A descendant of Isa Khan, the chief of the twelve Bhuiyas. There is still a Mosque with a bazar attached in Dacca town, called by his name, lying west of the Nawabpur Road.

[3] Inspector.

[4] There is Katra Muhammad Muqim, a little to the east of Chauk Bazar. It was mentioned in a statement submitted by the Collector in 1798: but no building now remains.

[5] Headman—but of what department is not clear.

[6] The same as mentioned above, but the prefix is peculiar.

[7] For Chand Khan's garden see also Hedges' diary. It lay on the river side nearly opposite the Lal Bagh. Does this entry show that the Dewan lived there? There is still a Bridge in the town known as Chand Khan's phul.

[8] This was evidently for orders to have bullion coined free at the Nawab's mint. There was much trouble over this matter later, see diary below.

[9] Hervy was a friend of his, see above.

[10] In 1684 he went to Hughly. Hedges writes at the end of 1683. "The place of Customer (customs officer) as well as Collector of King's rent and Government of this place is given to Aziz beig, a person yt speaks Turkish and showed himself my great friend at Dacca."

was jageered,[1] the king himself having showed his dislike against him from some particulars which he tooke notice of in the Wacka[2] sent hence.

October 19th. Mamood Hossen (formerly Cottwall here and afterwards Daroga in Hughly) was appointed Cottwall in place of Azzes Beague.

October 21st. *Mirza Mudaffar*[3] *came to visit Mr. Hervy bringing with him Mirza Alliar, nephew*[4] *of Shaista Khan.*

October 28th. *Rahmut Alla Chaan, King's Buxi, ordered to Silhet and Code Bux Chaan appointed Buxi in his place.*

October 29th. *Mirza Muddaffer came and promised Mr. Hervy some of the cordial the Nabob usually takes.*

[The above is signed by John Pownsett and Charles Evre.[5]]

1681. May 8th. *Raja Ruddoo Ray (who had been sent for) presented the Nabob and his Mutsuddis with* 1,50,000/- *and received from the Nawab* "the surpaw[6] of an elephant rich Jammo sash and girdle, from the Duan Hodgee Sophe[7] Chaan a horse, and with great honour and a powerful name had his ruxut or leave to return to his own country".[8]

May 23rd. *Haji Saphi*[9] *called for James Price.*[10]

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[1] The word جاگیر means "rent free grant" as also "pension." Jageered would thus mean pensioned and not dismissed.

[2] This was the periodical letter sent to the Emperor from the provinces (see Ain-i-Akbari).

[3] Mirza Muzzafar was brother of Khoda Bux Khan and son-in-law of Buzzurgh Amed Khan.

[4] Nephew is here used as in the New Testament to mean grandson. This Aliyar is probably the same as Taliyar, one of the legatees mentioned in Shaista Khan's will, who was son of Zaffar Khan (see below).

[5] Charles Eyre or Eyres. (See Introduction.)

[6] Sarapa, properly a set of robes, and from that, any present.

[7] The King's diwan: the same who acted as Governor on the death of Azam Khan.

[8] This entry is signed by Messrs. Hervey, Pownsett and Eyre showing that the first named had recovered.

[9] King's Diwan: Haji Safi Khan was evidently superseded in the office of King's Diwan for a short time for we read in the Malda Diaries that in August 1680 he passed by Rajmahal on his way to take up his former employment as King's Diwan. There is an interesting link connecting him with Dacca in an inscription in brick at the house of the Boses of Malkhanagar, one of whom (Debi Das) was Kanungo of the Nawara in the time of Haji Safi Khan. The inscription is dated 1089 B.S. or 1681 A.D.

[10] James Price is originally mentioned as a servant of Gabriel Broughton and as a man well known in Bengal 1658. He was sent

June 9th. James Price acquainted us that the Duan's Phurwana wd. speedily be perfected upon our gratifying the Mutsuddies: we thought convenient (tho' a greater matter was urged by the said James Price) to send Rs 15/- to the Munshy,[1] 3 yards of scarlett to the Peshdust[1] and 4 yards of ordinary cloth to the Cullumburdar[1] * * * * by name Purbul Das Munshy, Monwar Das Peshdust, and Coushal beague Cullumburdar.

June 11th. Hodje Sophe Chaan, ye King's duan, seeing our vaqueele this day at ye Nabob's durbar and signifying to him his desire of such wax figures etc. we had formerly given the Nabob, Shaistah Chaan, on notice hereof we concluded it most necessary (considering how much and how constantly we were obliged to him) to present him 2 wax figures together with those curiosities in the flint ware we recd. lately from Hughly from the Chiefe etc. * * * * We thought it convenient to add these particulars following having notice from our Vaqueel James Price how acceptable they would be to him, viz. * * *

June 13th. *The chief and second presented above articles The Duan was pleased.*

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to Dacca in 1669 by his chief, Clavell, to look after John Smith and to represent the Company at the Nawab's court. Previous to this also he had been employed on the Company's affairs in Dacca. In their instructions to John March (April 1669) they ordered him on his arrival at Dacca to seize James Price "whom wee have found negligent and expensive, if not treacherous, in managing what submitted to his charge.....and send him to us in fetters.....with secrecy and expedition."

In 1672 Smith wrote to Edwardes at Kassimbazar: "By James Price received a letter from you and thank you verry kindly for your advice concerning him. Wee have used him accordingly and never imployed him in a cowry worth of service." He left Dacca then but we find him spoken of in 1676 as the Company's recognized legal agent there. In 1680 he received a grant of Rs. 200/- as a reward for procuring a certain parwanna. He was at Dacca during the period covered by this diary and apparently was acting there in 1685. Sir William Hedges took a fancy to him and had him with him for a time: he was very indignant with Mr. Pownsett who had several times "declared if I left James Price behind me he would give him 500 Chawbucks (lashes) the next day after I was gone out of towne and slipper him out of doors." What became of him is not known (see diaries of Master and Hedges).

[1] It is not clear what the duties of these officers were, but they may have ranked in the order named, the last named being a writer. If, however, the Peshdast was the Chief Mutsuddi (see entry of 2nd Dec.) this supposition would not be correct.

June 26th. *John Pownsett summoned to Hughly.*

June 27th. *Nabob sent a present of some mangoes.*

July 8th. Coda Bux Chaan, the King's Buxi and third officer in the Kingdom of Bengall, this day doing us the honour of coming to our ffactory[1] we thought necessary according to all decency and custome * * * to present him with * * *.

July 11th. Came Manool Mendez Ffonseca[2] on a boate with China dishes from Hughly which being stopt by the officers of the Innaitgunge[3] (one Custome House belonging to this citty) we forth with ordered James Price to get release, which was done not without promise of gratifying the Daroga, Mier Moaz.

July 18th. *Allome (Alum) was sold.*

July 25th. *Vermillion was sold.*

August. *Entries show that Mr. Pownsett returned. In this month also mention is made of Dumry*[4] *as one of the Aurungs.*[5]

December 2nd. We (?) our Vaqueel to get discharged a parcell of sword blades belonging to M. Clement de Jardin[6] which Hodgee Coosroo Daroga of the Munchiarra Mahall[7] (under whose cognizance arises, etc., salt) had stopped, delaying their discharge as we supposed in expectation of a blade or two as usuall: but our Vaqueel brought us answer that this day he did not make those sorts of excuses he was used to

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[1] Hedges writes: "returned to ye English Factory, which is at least 3 miles distant from this, or Navob's durbar, a most inconvenient situation for doing the business, being far from ye Courts of Justice, Custom house and ye water side, for taking up or sending away of goods." The Nawab's durbar may have been held at the Chota Katra or more likely at his place by Babu Bazar Ghat: the Court houses were within the Fort (where the Jail and Lunatic Asylum now stand). The Factory was probably at Tezgaon, where we know the Company had interests later.

[2] Evidently a person of some importance, but I have been unable to find his name elsewhere.

[3] There is still a Mahalla in Dacca town of that name to the extreme west of the town, on the river side. It was a Customs house Chauki in 1808.

[4] This is Dhamrai on the Bansai river above Sabhar.

[5] A kind of subagency under the Factory: there were several in the Dacca District.

[6] A well known man of the time (mentioned in Streyansham Master's diary). Possibly an Englishman as he was originally called Jardin. He was a private trader.

[7] Possibly the *m* and *n* of this word have been misplaced by the writer. If so the word will be namaksar = salt revenue. On the other hand, it may be meant for Manihari Mahal, which was described in 1790 as a duty "levied from dealers and shop keepers for the privilage of bringing their articles of trade to the Chowk of this city."

before but said he would ask Monwardas,[1] the duan's chief mutsuddy, and give him answer ye next day.

December 26th. Having understood from Mirza Mudderffer that part of the flintware he lately bought was for Buzurgh Omeed[2] Caun, ye Nabob's eldest son, and being instructed by him also that it would be convenient for us to give him a visit with some small Nuzzer or present, as is ye custome of ye country (noe visit of this nature being made empty handed) we concluded to see him this day and present him

A large burning glass.
A pen knife.
A large prospective glass.
A meridian sun diall.

also, it being of late a generall complaint throughout ye whole city that frequent and bold robberies were committed, for ye security of the Hon'ble Company's effects we ordered ye keeping of more servants and a stricter and stronger watch in ye night.

December 31st. *The Chief himself (Mr. Hervey) went to the Diwan (Haji Saphi). The latter refused any parwanna*[3] *till the Emperor's orders should arrive.*

?January 1682. This day came a Saphi[4] to our house who called himself the Nabob's servant, pretending a right to our ground by ye deed of James Hart[5] (the former owner thereof) and brought with him a paper wrote in Portuguese dated in 1658 and signed by James Hart, which tho' ye paper appeared to be old and ye writing did import a gift of said Hart's ground house and goods, yet we believe was counterfeit, also

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[1] This may or may not be the same man as the Nawab's Peshdast. If so a peshdast meant a Head clerk.

[2] The conqueror of Chittagong: afterwards Governor of Patna. Erroneously reported by Manucci to have been killed in the war against Sivaji: he did not die for several years. In fact he was alive in 1691 when Shaista Khan made his will and he is one of the legatees, inheriting property in Gujerat, and the mausoleum of his brother, Abul Fattah Khan. He gave his name to a parganna in Bakarganj: there is also a place near the Hossaini Dalan, in Dacca town, called Buzurg Umed Khan's Garden.

[3] See entry of June 9th, above.

[4] Sufi, a hermit.

[5] If James Hart was long enough in Dacca for it to be likely that he should sell land acquired by him there in 1658, he must have come to Dacca much earlier and was possibly the first English settler in Dacca. He was probably working on his own account like Thomas Pratt.

accordingly we treated the Saphi, nevertheless 'twas thought convenient to send for ye Cottwall to us which we did, whom our favour as we directed him discoursed ye Saphie soe peremptorily and menacingly that he soon departed and we gratified the Cottwall with 1½ yards of ordinary cloth and his servants and peons with 2 rupees.

January 30th. *The Dutch*[1] *promising elephants, Arabian horses, etc., were granted leave to export rice.*

February 1st. Hodgee Suffee Cawn, the king's duan, having given order to take custome on all gold and silver brought to ye mint to be coyned, viz. 2½% of Mahometans and 5% of all others, there is like to fall great trouble on ye merchants who have and are now coyning, for the officers by virtue of this order are beginning with great severity to treat ye concerne demanding the arrears of some years past and making stop of their remaines[2] now in the mint: we are told also that we shall be brought in for what we have sold as well as what we have coyned. wherefore 'tis advised us by all to forbear putting any more silver into ye mint till this trouble receives determination and period, for as matters are now we can not expect our bullion to be coyned, or if coyned the siccas will not be delivered us but be detained as are of ye several merchants above mentioned.

The trouble had its rise from the importunity of the Dutch who having, as we advised the Chiefe, etc., of Hughly in our letter of the 9th October 1681, accepted of a Phirwana for Rajmaul[3] mint taking[4] Rs 4 2 -% (which we the day before had refused) and advising their Director thereof as we are told who was not content therewith they had orders from him to endeavour to procure a Mauze[5] (?) Phirwana, whereupon their Vaqueel was daily urging and

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[1] The Dutch had settled in Dacca before Manucci or Tavernier visited the place. Their factory was situated on the site of the present Mitford Hospital. When Hedges was in Dacca the Dutch factors there were John Bonstoe, Alexander Urwin and Jacob Smith.

[2] This word is used to mean balance, and is used also elsewhere in connection with the balance in hand in account matters.

[3] Rajmahal.

[4] This must be a mistake for "agreeing to give."

[5] I do not understand this.

importuning ye Duan and his mutsuddies, and having once made this an argument that in regard nothing was paid in Dacca there was no reason any thing shd be paid in Rajmaul (which ye chiefe here in his address formerly did on purpose avoid, foreseeing and fearing the evil that has now succeeded as may appear by our said letter of 29th October 1681) hereupon the duan did forthwith make this irregular conclusion that if custome was taken in Rajmaul it ought also to be taken here, and after a while gave orders for the execution of which the officers are now about.

This is at present an unhappy stop of business in the mint though where it will end we can not say, the merchants in case of necessity being resolved to complain hereof to the Nabob and that ye duan as appears by severall sunuds and papers has noe reason or ground for this demand and exaction.

January 4th. *Sold lead to Roop Naraine. Gave Fazula 2 yards ordinary cloth and Noore Mahmood 1 sword blade.*

January 5th. Coda Bux Chaun the Nabob's son in law having within 2 or 3 daies sent divers times for Spanish wine for medicine received 5 quarts.

January 20th. Mirza Duckin[1] ye Nabob's son having sent for ye chiefe he went and it being the first visit carried with him according to custome 1 mohur and 5 rupees of which he took 1 rupee only : gave his servants at departure 5 rupees.

March 4th. Bool Chund[2] from Muxoodavad arrived here bringing with him vast treasures of gold and silver, being partly the Emperor's and partly Shastah Caun's rents, besides an extraordinary Peshcash to ye later occasioned through complaints of ye whole body of merchants inhabiting in his dominions against ye severity of his exactions and late cruel usages of them.

March 9th. Ye Nabob in ye 77th year of his age had this day a son[3] born, which occasioned a

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[1] Probably Dakhini, referring to his birth in the Dakhin as one of Shaista Khan's sons, was born there. *Cf.* Mirza Bengali, the name given to another son, Khoda Band Khan, who was born in Bengal.

[2] Bal Chandra, see Hedges' Diary : He was the chief revenue officer of Hughly and Murshidabad.

[3] This is evidently not the same son as Hedges tells us was born in November of the same year.

Hedges tells us that the Nawab was 82 years old at this time : probably the diary is more correct.

general rejoicing amongst his servants and favourites. many presents were also made him and care was taken by Ray[1] that this unusual mark of fortune shd. be entered in the publique Wacka it being very advantageous to him that the Emperor shd. from hence conclude that he was still strong, healthy and of ability for Government.

March 10th. *Boolchand made Daroga of Hughly* vice *Coja Enaitoola.*

March 12th. Bool Chand departed Dacca having presented ye Nabob 200,000/- Rs. and received of him viz. 4 large pearls with 2 rubies for his ears, a golden standish,[2] a golden hilted sword, and an elephant besides a Jammo Shash and (?) and of the Duan a Persian horse.

March 21st. At night an exceeding terrible storm of haile[3] fell, some stones being taken up in our factory weighing 4 pounds : most of ye thatched cottages of ye city were beaten down. many men and much cattle were greatly hurt and our building in divers places defaced and damaged.

March 22nd. The Dutch presented several Peshcashes consisting of horses, elephants, Jappan and Europe rareties, spice etc.

Those to the Nabob and Buzzugh Omeed Caun his son being late promises for discharge of their provision etc. and that to the Duan[4] was for Sultan Auzum promised when they received their Nishan[5] of him here in Dacca.

March 27th. The Dutch received Soorpawas for their Director and themselves of the Nabob and Buzzourgh Omeed Caun.

Do. *Sold wine glasses to Mirza Mudduffer.*

April 4th. The last years excessive floods[6] (when the waters were here higher than the oldest native of Bengall had ever seen or heard off) having

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[1] This is Ray Nanda Lal the Nawab's Diwan or Wazir. Hedges tells how he was taken to Murshidabad and died there in 1683.

[2] A standing dish for pen and ink.

[3] Such storms are not uncommon in Dacca. I myself some 15 or 16 years ago saw the Ramna covered with large hail stones the size of cricket balls : and in 1918 stones of 11 or 12 ounces fell at Joydebpur.

[4] The King's duan who held the same post in Prince Muhammad Azam's time.

[5] See Introduction.

[6] Floods have always been common in Dacca ; another is mentioned by Hedges.

soe sunk and worne ye ground before ye factory gates that we had great cause to fear (being told soe also by all that saw it) the approaching rains would prejudice if not quite destroy ye building near that place wherefore for prevention thereof we concluded it most necessary to fill up ye low worne places with earth and bind ye same fronting the tank with brick work that it might continue and be able to resist ye violence of ye waters in ye rainy season and ye charges generall keeper, Charles Eyre, was appointed to goe in hand with and oversee the same and be as frugall herein as was possible.

April 8th. A terrible storm of haile fell which defaced and damaged the building exceedingly.

April 15th. The Daroga of the mint having often sent his peons to call our vaqueels this day gave us very great trouble, one Chubdarr after another coming with great importunity and peremptoriness demanding that our vaqueels goe with them to their master, wherefore we sent them and he demanded an account of them of all silver and gold we had sold for 2 years past, but they having caution from us by noe meanes to utter a word of any such matter though he should urge it putt him off this time with delayes and excuses. By this passage it may be perceived there are endeavours used to fix custome on us not only for what we have coyned but what we have sold alsoe to ye merchants.

April 20th. *Emperor's order received to pay customes on goods imported and exported.*

April 25th. *Daroga of the mint demanded customes again. having procured accounts from the merchants. some of whom had been put in confinement.*

April 27th. *Vakil attended Durbar where some enquiry was made (the Diwan[1] being absent). The Nawab asked why customes were demanded, saying there were 24 mints in the Kingdom and only in two (Dacca and Rajmahal) were customs demanded.*

April 28th. *The Diwan was very angry at this. The Nawab gave secret instructions to the merchants to stop business and go out of the city sending a Vakil to ask for the Nawab's dastak.*

[1] The King's Diwan.

April 30th. *The Diwan's peons came to the Factory about the Mint custom, but were got rid of by fair words and gratuities.*

May 8th. A Phirwana [1] came from ye King ordering Ruzzugh Omed Caun the Nabob's eldest son forth with to sett forward for Pattana there to fight Gunga Ram. or on refusal to leave his munsub, and that Mirza Docan [2] another of the Nabob's sons to proceed Suba of Selhutt.

At the same time came also news that "Abboo Nassoor [3] Chaun or Zubberdust Caun" (another of the Nawab's sons) "an omra of note and grandeur had leave from the Emperor (whom he had attended in his wars with good success and honour for severall years past) to take his residence with his father here in Dacca.

May 10th. That the trouble of the mint is yett great, none being permitted to coyne freely without interruption as formerly.

May 12th. Zuffer Caun [4] the Nabob's son and Suba of Chittagong came hither having desired leave to see his father.

The Emperor on the news of Shausteh Caun's last sonne ordered by Hossbull Hookum 10,000 Rs. yearly settlement on him out of his treasury till a munsub were given him.

May 25th. *Mahmud Reza was the Nawab's Mir Tuzurk or Master of Cermonies.*

May 28th. Buzurgh Omeed Caun made his (? Pentawa) [5] for Pattana with a very great traine of servants and followers with an army of 3,000 horse, etc.

May 31st. *The accounts show that one Coja Amber [6] was presented with a sword and a pair of scissors.*

June 9th. *One Nichola a Paina [7] was a man of interest at the Durbār.*

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[1] Farman or Royal mandate or decree.

[2] Dakhin or Dakhini—see above.

[3] Abu Nasr Khan, Nawab of Agra. He survived his father and was one of his legatees, inheriting property in Suba Burhanpur and the mausoleum of his brother, Aquidat Khan.

[4] Zafar Khan. He predeceased his father, evidently dying and being buried in Cashmere, as the following extract from Shaista Khan's will shows: "The properties and the endowments in the town in Suba Kashmir: two gardens, two dwelling houses, and the Trusteeship of the mosque and mausoleum of Zafar Khan deceased, I bequeath to Mirza Taleyar, son of the deceased, my grandson."

[5] The word is doubtful, but if it is Pentawa it may be derived from Panth or Pantha, a way, road or course.

[6] This must be the man who constructed the mosque well and bridge north of Dacca town by the railway crossing on the Mymensingh road.

[7] I cannot trace him elsewhere.

18th & 21st June. *Nawab sent the chief presents of mangoes.*

June 26th. Borrowed of Ram Ray Rs. 1,000/ at interest 1 Re. 6 A. per cent monthly * * * * * and paid to Charles Eyre for charges generall, etc.

July 5th. Meir Moaz, Daroga of the Allumgunge,[1] and favourite and relation of Hodgee Sophee Caun. the King's Duan, sending for some canary for medicine, recd. two bottles.

July 8th. *Murlidhar (Murledar) was the Nawab's House Diwan.*

July 15th. *Mr. Baines*[2] *master of a sloop that put in at Chittagong arrived, the Nawab having summoned him.*

July 24th. News was brought ye Nabob that the ye Oshamees[3] with a mighty and furious army of 300,000 men had made an incursion into ye country[4] lately conquered by Sultan Auzum ye Prince and late Suba of Bengall taking killing and destroying all before them.

July 26th. The King's duan having a long time troubled ye merchants for 5 per cent customes for all gold silver and copper they had coyned ye foregoing year began now to bee more severe with them. nevertheless ye Ray opposed what he could assuring ye merchants ye Nabob would assist them and present their complaint to ye Emperor: this was supposed to be done not soe much out of care of the merchants as ye Nabob's hate against ye Duan.[5]

July 29th. *The Emperor's Nawarra or fleet departed Dacca for the Ossham country.*

July 31st. The account of particulars given to Durba officers this month was read and passed, viz :—
Given Sultan Mahmood. Daroga of the Chaupa[6]

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[1] Alamganj lies by the river on the east of the city. It was a customs station, just as Inayatganj was the customs station on the west of the city. In 1808 it was a customs chauki.

[2] The only other reference I can find to this man is an entry in Hedges' Diary that in 1684 he was one of those accompanyiug Hedges to Devil's Reach to meet the new President.

[3] Assamese. See Gait's History of Assam for this last war against the Moghuls.

[4] Gauhati and the neighbourhood. See Stewart.

[5] The King's Diwan was independent of the Nawab.

[6] Evidently from Chhapa, a seal or stamp. But what the officer in charge of this department had to do with the passing of boats is not clear. I find from old papers in the Collectorate that Chappe Jamdanee was levied from the weavers of Jamdanee (a particular kind of muslin) a reference is also invited to the Malda Diaries where the word is used frequently.

Mahall and relation to ye King's duan for his friendly passing our boats with (? out) delaye.....5 yards of scarlet.
To ye King's duan.....2 swords and 10 yds English velvett.
To Mier Moaz[1].....2 bottles canary.

August 7th. By reason of ye lawless of Gohattee and ye Osham country ye Nabob and duan[2] cashiered of their munsubs divers Munsubdars and other officers supposed faulty in their respective charges and management of ye late action there to ye amount of Rs. 600,000 per annum.

August 8th. Visited ye duan and procured his order for Phirwannas to be wrote in ye manner we desired.

August 22nd. *A Vakil of Mr Pitt*[3] *appeared in Durbar and promised to pay customs : complications expected.*

September 17th. We had news of Hodgee Sophee Caun ye King's duan is jageered and Syed Amud Duan at Pattana is ordered in his place. Ye Nabob Shahstah Cawn sent to him to (? deliver) up his accounts to Coda Bux Caun (now Ruxi[4] of the city) who shd. supply the place till the other did arrive.

Buzz Omeed Caun ye Nabob's eldest son having divers times sent for 40 or 50 bottles canary wine and would have paid for ye same, but we did put it off from time to time telling him that we had not received any this year he would not be put off any longer urging his great necessity for ye same We sent him 10 bottles not thinking it convenient to take money for so small a quantity.

September 21st. A Phirmand from ye king to Nabob Shestah Caun with a sirpaw for Buzorg Omed Caun also an order for him to repair speedily to Pattana to be Suba there.

September 22nd. The Nabob and Buzorg Omeed Caun went out[5] to fetch in the King's Phirmand as usuall and Sirpaw for the latter.

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[1] He was Daroga of Alamganj and was related to Haji Saphi Khan.

[2] The Nawab apparently could not do this alone as it was an Imperial matter.

[3] An interloper, as non-Company traders were then called.

[4] He was King's (i.e., Emperor's) Buxi and next in importance to the King's Diwan. So it was natural that he should take charge, even although it was to Shaista Khan's advantage, Khoda Bux being his son-in-law.

[5] This describes an interesting old custom intended to show publicly

September 25th. *Charles Cross*[1] *arrived from Hughly and took charge of the warehouse, Charles Eyre becoming second.*

October 10th. *Buzurg Omeed Caun took his leave of the Nabob and went away to Chaun Caun's garden.*

October 15th. A hushbull hookum from Assud Caun Vizier[2] to Hodgee Sophee Caun yt he charged[3] ye expenses of Auzumgurr alias Gohatty from ye time it was given to ye Prince to ye time of taking by ye Oshamees to ye account of Shaustah Caun, the artillery that was lost to Munsoor Caun's[4] acct.

October 25th. The Rt. Worpll the Agent[5] etc Councill arrived here this morning.

November 7th. We having an old Turkey horse which hath been here about 9 years and now past his labour hath not done any service for 7 or 8 months past not deserving his meat scarce able to walk. we acquainted ye Rt. Worpll Agent herewith (he being present) who bid us forthwith put him out of ye stable, another being of necessity (we having noe palkee) wee bought one a large bay, young and serviceable, cost Rs 240 -

November 30th. Repaid Mr. Hervey for what hee had disbursed to ye Dutch doctor and others who attended him in his late long fit of sickness, Rs. 100 -.

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the Nawab's subservience to the Emperor. See the account of the death of Mukarram Khan (Nawab) in 1622, who was drowned when going out to receive the King's Farman (see Riaz, p. 207).

1 Nothing much is known of Cross. He was Hedges' confidential clerk in Dacca and so was opposed to Pownsett.

2 i.e., the Emperor's Wazir at Delhi.

3 This was rather drastic.

4 He may have been in command of the artillery, but Mirza Muzaffar, as master of ordnance, had a narrow escape.

5 Mr. (afterwards Sir) William Hedges. In his diary he says he arrived at Chand Khan's garden in the forenoon; this is what is meant here.

Part II.

In order to appreciate the second instalment of these diaries, which deals with the period 1688 to 1691, it is necessary for the reader to understand what was going on in Bengal for two years before.

It took the English a long time to realise that an order from the Emperor was no protection to them against the exactions of the Nawab at Dacca, and that the Nawab's order did not relieve them from the oppression of his subordinates. When they did, they resolved to resist oppression with force, and so in 1686 the Court of Directors despatched ships and troops to Bengal with orders to take and fortify Chittagong and if necessary surprise the Nawab himself at Dacca. Job Charnock[1] was then the Company's representative in Bengal and the forces sent were placed under his orders. Soon after their arrival at Hughly a collision took place with the Nawab's troops: out of this the English emerged at least the moral victors and an armistice was declared. Shaista Khan, however, who was then Nawab ordered further reinforcements to Hughly and would have imprisoned Mr. Watts,[2] the Chief at Dacca, but for the intervention of Baramal.[3] On the arrival of these fresh troops Charnock withdrew to Sutanuti (Calcutta) where he waited to negotiate. Watts arrived there with Baramal to whom Charnock formulated his demands. The Nawab appointed three Commissioners, viz. Baramal, Malik Barkhardar[4] and Mir Faka[5] to treat for peace and what are known as the Twelve Articles were drawn up. We read in a letter from Patna (25th June, 1687): "They agreed upon the following articles, but left them unto the Navob's approbation, and Agent Charnock insisted to have them confirmed by the King, vizt., that they should have a sufficient quantity of ground to build a Fort upon, and there to have a mint, that the Navob should rebuild Maulda Factory, restore the 45000 Rupees he took about the Cassambazar trouble and recover all the debts contracted by

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[1] There is no space here to give a note on Job Charnock; besides his history is so well known that it would be out of place to write anything about him here.

[2] I can not find out any thing about him, unless he was the Richard Watts who with Francis Ellis, Roger Bradyll and others formed the Government of Fort St. George in 1699.

[3] Called Bohur Mull in the old diaries. He was a mansabdar at the Nawab's court and as such probably held a high office.

[4] Called variously Burcoondar, Burcoozdar, and Barcvardar. He was Fauzdar of Hughly.

[5] Called Meer Phancar and also Mier Facca, and described elsewhere as the Chief Captain of the Nawab's intended army.

the right worshpll Agent when Chief there; and that hence-forward the Government should not determine any controversies between the Natives and the English but that they should be left at our discretion and that futurely we should be custome free."[1] These Articles were sent to Shaista Khan for confirmation but he returned them unsigned, threatened the English and issued orders to his subordinates to drive them out of Bengal. Charnock's reply was to bombard the forts at Thana (Garden Reach) seize the island of Hijli and destroy Balasore Hijli was his headquarters for a long time and one of the generals fighting against him there was Abdul Samad of whom we read in the first instalment of these diaries. The English having again obtained the moral advantage moved up to Ullubaria, and in July received a Parwana from Shaista Khan allowing them to continue their trade at Hughly and secure themselves at Ullubaria Charnock then decided to pause and await developments, sending Messers. Eyre[2] and Braddyll,[7] two of his Council, to Dacca to press the English demands. News of all this reached England in due course and the Directors decided on more rigorous measures. They sent out Capt. William Heath[3] with more forces to supersede Charnock and gave him instructions to seize Chittagong, taking all the Company's officers and property to that place. Arriving in Calcutta about 25th September, 1688. he took charge at once and ordered the English there to get ready to embark. Before starting he wrote a letter to the Nawab, which reached Dacca on 29th October. All he says about that letter himself is "I would certainly depart from Calcutta and carry with me all belonging to the English nation except within that time (we) should find better hopes of accommodation from the Nabob to which purpose according to orders I wrot said Nabob but never received answer."[4] But the letter appears to have contained demands for permission to fortify and also some definite promise. probably of help against Arrakan. It is to be noted that by this time Bahadur Khan[5] had replaced Shaista Khan as Nawab. The letter annoyed him because of the demand as to a fortification[6] and he took the reprisals against Eyre and Braddyll which are described in the diary following.

On the 8th November Heath left Calcutta for Balasore. which he stormed before leaving. There a letter was received from the Nawab to the effect "that if we would transport 1000 horse and 2000 foot into Arrackan (then we should have what we desired in Bengall) and serve him for 12 months gratis, as

1 See Hedges' Diary., Vol. II.
2 See notes to diary below.
3 He commanded the *Defence* in which Hedges came to India.
4 See Hedges' diary, Vol. II.
5 See below.
6 This was the impression of Eyre and Braddyll, see diary below.

Mr. Braddyll and Mr. Eyres, the two Ambassadores, had promised to assist them in taking Arrackan and that if he[1] confirmed the agreement he would send Bohur Mull to treat further with us. To which Agent Charnock desires to comply withall, although I told him I would not nor could doe it, yet consented that he might if he pleased answer the letter that we were ready to doe it but the season of the year passing away we could not wait there, but would sail towards Chittagong where we should expect Bohur Mull, and might be a convenient place to transport the horse and foot immediately to Arrackan."[2] Another letter was also received from Messers. Eyre and Braddyll saying that "the Nabob would not grant their requests till that the Agent did confirme what Capt Heath by his letter to the Nabob had promised."[3] Further a parwanna came from the Nawab which was sent ashore to the Governor by the hand of Mr. Ravenhill. Heath, however, without waiting, as Charnock wished, to see the result of the Parwanna or to enter into any negotiations precipitately quitted Balasore leaving Mr. Ravenhill behind. They all set sail for Chittagong whence Heath himself says he intended sending a message to the King of Arrakan to ask his co-operation against the Nawab. He actually, however, on arriving outside Chittagong on 17th January (1688) sent a message ashore to say they were ready to help the Nawab against the Arrakanese and had come to receive the 1000 horse and 2000 foot he had promised to transport. He was told the Nawab's son and possibly Bara-Mal were expected shortly and was requested to await their arrival: but for some reason he was not satisfied with his reception and left Chittagong on 29th January sailing for Arrakan. After a short stay there, during which he treated first with the King and then with a rebel prince, and again without waiting for negotiations to proceed he weighed anchor on 17th February and sailed to Fort St. George. It is interesting to read what Charnock and his council wrote in the following month: "We have reason to believe that the Nabob Bahawder Cawn was reall, notwithstanding what may be alleged to the contrary and as well wishers to the Rt Honble Compy's prosperity we cant but be extream sorry that Capt Heath should have thus slighted and rejected such good opportunityes and fair offers[4] for the settling of the Rt. Honble Company's affairs in Bengall and in likelihood confirme and conclude an honble and firme peace and we should have so obliged the Emperor by the addition of that

[1] This means Charnock, to whom the letter was evidently addressed.
[2] These are Heath's own words.
[3] Heath's letter is not forthcoming and the whole matter is somewhat confused.
[4] This refers to the offer of the rebel prince who promised to help the English with the Nawab, if they would join the latter's forces against the king of Arrakan.

kingdome[1] to his Territories that not only the confirmation of our Twelve Articles formerly agreed on, the grant of a fortifyed place where we might settle our own Government, together with a discharge for all past damages which the Nabob Behaudur Cawne promised under his hand and seal, would have been recorded to posterity[2] but on the contrary' tis to be feared that the Nabob Behauder Cawne will be highly inraged at our perfidious dealings and will improve the same by sending these Perwannas with your letters and replyes thereto to the Emperor which will confirme all the lies and stories that Shaista Cawne wrote against us and undoubtedly will extremely incence the Emperor against us."[3] Charnock and his party remained at Fort St. George for more than a year. In the meantime Ibrahim Khan had become Nawab at Dacca, and he wrote inviting them to return to Bengal, which they did but not until the Emperor had issued an order[4] (23rd April 1690) to the Nawab not to interfere with them and to let them trade freely as before. Next year a Hashbul Hukum[5] came from the Emperor fixing the former Pesh Kash[6] of Rs. 3000 annually in lieu of all customes, and this was communicated by the Nawab to all his subordinates in Bengal.

During the period dealt with in this second instalment of the diaries there were two Nawabs at Dacca. The first was Nawab Khan Jahan Bahadur Zafarjang Kokaltash, generally called Bahadur Khan, but in the letter of 28th February 1689-90 below he is called Cawn Jehoan Behauder. He is not mentioned in the Riaz us Salatin and Stewart dismisses him with a passing reference. The Maasurul Umara makes five words suffice to describe his Viceroyalty in Bengal. The only identification of him hitherto published, I believe, is by Wilson in his "Old Fort William." His name was Mir Milki Kassim (the others being titles) and his father's name was Mir Abul Ma'ali Khwafi. He served the Emperor in many capacities and was Governor of several provinces. He arrived in Bengal in June 1688 and left about June in the following year. He died in 1697 at the age of 84, so that he was 75 years of age when in Dacca, and this agrees with the description, "that wicked old man."[7] The other Nawab was Ibrahim Khan, son of Ali Mardan Khan. He was transferred from

[1] Arrakan.
[2] This is much the same as Eyre and Braddyll say in the diary.
[3] See Hedges' Vol. II.
[4] See Stewart.
[5] This is defined in Wilson's Glossary thus: "A sending to command The initial words and thence the title of a document issued agreeably to Royal authority, by the Vazir or other high offices of Government."
[6] Present.
[7] See letter of 6th August 1689 below.

Patna to Bengal, where he remained till relieved by Prince Azimushan in 1696 or 1697. He had previously been Governor of Kashmir. He died in 1710 at the age of 80.

The local officers mentioned at this period were :—

King's Diwan ..	..	Kifayat Khan.
King's Buxi ..	..	Muhammad Sharif.
Nawab's Diwan ..	..	Khwajah Labib and Malik Hadi.
Amin ..	..	Muhammad Taqi.
Nazir ..	..	An Eunuch (name not given).
Fauzdar of Jatrapur	..	Muhammad Sadaq.

DECCA.

Dyary commenced August 1690 (and ye Generall Acct from ye confiscation of this factory by Bahauder Cawn,[1] Nabob of Decca, Nov. 1688) to April the 30th 1691.

We had thought after our severe confinement of continuing a diary of an account of all durbar passages etc. relating to ye Rt. Honble Compy : as usual, but understanding of a Warr carried on by his Excellency ye Genll &c at Bombay[2] against the Mogull. also considering of the King's or Mogull's order [3] which arrived here in September 1689, for ye demolishing the Rt. Honble Compy's factorys and imprisoning all English,[4] it was approved no wayes safe nor convenient to proceed in that method for feare of a second confinement and seizure of our papers, but to continue our correspondence to ye Fort [5] by letters (until the arrival [6] of the Rt. Worshipll Agent and Councill) the which being very considerable and of great moment it's convenient they be entered here, and the diary to commence the 13th August as will appear at the end of the said letters which follow :—

DACCA, Jully 9th 1689.

To the Rt. Honble Elihu Yale. Presdt. for affaires of the Rt. Honble English East India Company on the coast of Choromandell, West Coast, etc., and Governour of Fort St. George, &c., Councill,

It having pleased God of his infinite goodness and mercy

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[1] See Introduction to this Part.

[2] Wilson in his Early Annals tells us that in 1689 the Company "commenced a vigorous campaign upon both sides of the Indian peninsula. Orders were sent to the Governor of Bombay to withdraw from Surat and the other parts on the west coast and to direct his cruisers to seize every Moghul ship and vessel that could be met with." In a letter dated 10th October 1689 from Madras (quoted in Wheeler's Early Records) we find the remark "but the war still continuing at Bombay." It was this war waged against the Moghul shipping that made the Emperor Aurangzebe anxious to conciliate the English.

[3] This order was probably the consequence of Capt. Heath's extraordinary expedition: but I can find no other reference to it. Nawab Ibrahim Khan who was Nawab at Dacca at the time apparently paid no attention to it.

[4] It is evident that there were more English residents imprisoned than Eyre and Braddyll; but who they were is not clear—probably subordinates and servants.

[5] Fort St. George, where Charnock spent more than a year at this time.

[6] i.e., until the return of Job Charnock from Fort St. George.

to redress us out of our odious and inhuman imprisonment [1] we presume it may not be of too much impertinence, now out of course, if we first give your honr, etc., a particular relation of the Govt.'s proceedings against us since the departure [2] of (and some time before) the Agent [3] and Councill from Bengall in the conclusion of which what relating to the Rt. Honble Compy's affaires and that which is of the greatest importance we shall represent to your honr, &c.

On the arrival of Capt. Wm. Heath's [4] letter to the Nabob (which was the 29th 8ber last) [5] wherein the Fortiffication etc. was requested, the Nabob the 3rd of 9ber [6] ordered several gun men to surround our Factory to be spies upon us and to follow us wherever we went which continued untill the 16th or 17th Do. notwithstanding all meanes used and severall presents now and then of sword blades, wax figures etc. to the Nabob: the 17th at night arrived from Mollick Borovardan [7] the newes of the Agents &c's departure from Calcutta [8] which so displeased the Nabob that he immediately ordered the Cotwall [9] and about 200 gun men to enter our house and to confine us close to one of our roomes shutting up all the windowes of every roome in the house. and all the time this lasted which was till the 22nd of January we were not suffered to fetch or carry anything to or from our Chambers without 3 or 4 of our guard along with us: Our very cloths which were carried to ye washers were searched soe that the Nabob's intentions were apparently knowne that if any disturbance should happen between the English and the Government then to secure all, which accordingly was put in execution the 20th January upon the news of the fleet's arrival at Chatgaam [10]

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[1] This refers to what is described below. The English were evidently imprisoned in Shaista Khan's time also, for we find that Eyre and Braddyll wrote as follows to Job Charnock: "We are not permitted to lie in our chambers for fear we should make our escape by undermining, somebody having told the Nawaub that the English that were imprisoned in the time of Shaista Khan escaped in that way." (The reference has been mislaid, but I am almost certain I found it in the Hughly Diary).

[2] Job Charnock twice left the Hughly. The occasion referred to is the second departure with Capt. Heath. (See Introduction to this Part.)

[3] Job Charnock.

[4] See Introduction to this Part.

[5] October.

[6] November.

[7] Barkhwardar: the final *n* in the text must be a mistake for *r*. and the second *o* probably meant for a *c*, making the word Borcvardar

[8] On 8th November 1688.

[9] Chief Officer of Police.

[10] The fleet arrived outside Chittagong on 17th January. It is not clear why this should have caused the Nawab to treat the English more harshly, for nothing but Heath's arrival at Chittagong could by this time be known to the Nawab. It may be that a false report came to the effect that the English were bombarding Chittagong (see note below).

the Nabob sending his Ameen [1], Mamood Tuckey, to our house who acquainted us that the Nabob had impoured [2] him to seize our house, in order hereunto he clapt most of the Rt. Honble Compy's concerns in one roome not sparing our apparell and opening all the rest had a whole view of what we had in the house when immediately he caused all ye roomes to be sealed and left us: about 10 of the clock at night returning againe he signified to us 'twas the Nabob's pleasure he should fetch away the broad cloth and silver and whatever was of value (and that in the morning the King's officers [3] would come and take an account of the rest) which he accordingly did by oxen and dooleys, having taken away most part of ye broad cloth, the whole quantity of silver, [4] which were 7 ingotts, the plate * * * * and a great part of (?) men's goods, which work he finished about 3 of the clock in ye morning.

A few days after the King's officers came and took an account of what the Nabob had left which with particular men's goods amounted to, according to estimation. neare Rs. 2000. They likewise seized all our papers notwithstanding our earnest request to them to remit them to us: Mahmood Tuckey told us that our fleete at Chatgaam had discharged severall canon [5] but would not tell what mischief proceeded thereon, and that therefore the house and goods were ordered to be seized and that the Nabob intended to send us to Lal Baugh [6] prison (ordering us our wearing apparell, kitchen utensills, palkees and rups 200 [7] for expenses) which in a few days after was accordingly performed, where we remained as in our ffactory untill the 11th of March when our troubles began to grow greater and greater upon us, for at the same time arrived Mr. Henry Hanley [8] and Mr. James Ravenhill [9] with 14 persons

[1] The Amin is mentioned along with the Kotwal in the first instalment of the diary. He may have been the Collector of Revenue.

[2] Empowered.

[3] Those under the Diwan, who were independent of the Nawab.

[4] Silver kept for being coined.

[5] See Introduction to this Part. None of the authorities mention the fact of any guns being fired in Chittagong: Even Heath himself writes "the reason why we did not assault the place is given under our hands in another paper." The statement may have been false and made to justify their action or more probably such a rumour actually reached Dacca and the Nawab believed it.

[6] Lal Bagh was built in 1678 by Prince Mahd. Azam, but never actually finished. It was intended for a Palace but never used as such.

[7] Later we find that it was 187-.

[8] Evidently a copyist's error for Stanley. We find a Mr. Henry Stanley was chief at Balasore both when Heath arrived there and also at a later period. He was evidently not taken on board before Heath bombarded Balasore. The mention of his name before Ravenhill's tends to show that he was senior to Revenhill and strengthens the identification with Stanley.

[9] He was a Company's factor who accompanied Heath and Char-

more (whose names we shall hereafter mention) in company, all in a most miserable and tattered condition, laden with fetters of about 8 lbs. who were carried before the Nabob the 20th of March and committed to the charge of one of his Eunochs with orders we suppose how to manage us as appeared afterwards, for till that time we were free from bonds and used with much civility, but no sooner were they committed but we were ordered to participate of their affliction and were carried to the same prison [1] and laden not only with fetters of the same weight but chained every night, us two together, (taking turne for bearing the locke) [2] and Mr. Hanley. Mr Ravenhill the rest were exempted as being poore seamen [3] and not wherewithall to purchase their liberty, for this severity was only to screw what more money they could out of us ; but being sensible of what dangerous consequence the consenting to the Nabob's avaritious humour would prove to us we did with a great deal of patience lay aside all thoughts tending that way.

About the middle of April there was a strong report in ye citty (tho' the Nabob endeavoured to hush it up by imprisoning those who were caught in declaring it) that the King had sent for him, he being in trouble with his sons, and that Ebrahim Cawn, Nabob of Patna, was to succeed him in the Subaship of Dhacca, who the 23rd April or thereabouts sent for Mr. King in Patna to him and asked him the reason of ye English leaving the country, who gave him so good an account as he was able and referred him to us upon his arrivall here. Coppyes of Mr. King's letter we have thought convenient to send herewith. He gave him a great deal of encouragement [4] (for all this while there was noe attempt made upon his person) [5]

nock. At Balasore he was sent ashore with a letter to the Governor and was left behind. This accounts for his having been captured with Stanley. He was dismissed afterwards and went to Madras. Later he became a member of the United Council and in this lived to be one of the oldest of the Company's servants. He died on 21st January 1717 after 35 years' residence in India.

[1] This is the common gaol referred to later. We may assume that the Lal Bagh was a kind of State prison.

[2] Perhaps meant for looke=look out or watch.

[3] It does not appear that the Nawab ever discovered that they were not poor seamen. From this letter we may assume that they were not arrested in Balasore, otherwise their identity would have been disclosed : they must have escaped and joined a party of sailors elsewhere.

[4] Nawab Ibrahim Khan throughout the diary gets credit of recalling the English but the Emperor Aurungzeb himself was probably responsible to a great extent.

[5] He was imprisoned by the Nawab at Patna before October 1690, for in that month he wrote to Job Charnock saying " If I have not the money to give the Cutwall and the Keepers of the Prison and the Guards that Guard me they abuse mee most grossly * * * * For the Lord Jesus Christ's sake let me not perish in this hellish prison." In October 1693 Sir John Goldsborough wrote: "The Nabob of Pattana still holds Charles King in prison and insists upon 1500 rups. for his

and his perwanna immediately thereupon, bidding him send it away to us to forward to yr. honr. &c and also bid him write to us to bear all with patience, that upon his arrival he would assist us what lay in his power, whom we have since found as good as his word, and much beyond what we could expect, for before he arrived ye citty he ordered his Duan [1] (who is not inferiour to himselfe for a just upright man) to send for us all to his house and cutt off our irons which immediately was done the 29th June past and provision sent us from his owne table promising us that when the Nabob came to the citty (which was the prox July) he would present us before him and dismiss us.

The 2nd currtt. Mr. Hanley, Mr. Ravenhill and ourselves (as for the rest of the company they were permitted to goe to the factory ye next day after their irons were cutt) were sent for to the Nabob Ebrahim Cawn, who with a great deale of affection and a smiling countenance expressed himself in these words: that he was given to understand that the English under the late Subaes' Government had received very considerable losses by the interruption of trade occasioned through their avaritious humours, besides the many abuses and affronts; I would have you therefore write to them to acquaint them of my arrival here and that my desire and intention is to see them well settled and their trade with the Kings' country flourish as formerly, the incomes of which having been much diminished by the ill management of the aforesaid Subaes and your loss of trade together; that my chief end herein is out of a pure respect to the King's country and yourselves and not any thing of self interest whatsoever, and for your better encouragement I will give my perwannas and seerepawes; and ordered one of his servants to goe along with us to his writer and sett while the perwanna was ready. In the evening we were sent for to him againe where we received each of us a shall [2] and the perwanna [3] ready sealed and a second encouragement only thus much different from what was said in the morning, that he would have us by all meanes write for our people and that if they would come downe and make knowne their grievance he

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freedom. This King was a Sergeant run from his colors in the wars here, and went to Pattana where the Nabob held Mr. Braddyl. Upon King's being there Braddyl got him to personate Chief in his roome to the Nabob and soe gott away himselfe. Upon this the Nabob imprisoned King." Our diary shows that King was in Patna in a position of some responsibility before that time. He was released in 1694 on a subscription amounting to 800 - being raised and paid to the Diwan of Patna. In 1704 we find him keeping a public house in Calcutta.

[1] I think the king's diwan is meant. Later on, it is stated they were made over to the "King's Duan."

[2] Shawl.

[3] This is not the document reproduced by Stewart; it was probably only a preliminary permission to return to Bengal.

would redress them and give them all imaginable satisfaction that can be expected or that they should require, and that if we desired a dustuck [1] to goe ourselves we might have it and so dismisst us to our Ffactory.

We question not but long ere this Yr. honr. &c have had advice of the pacquett of letters you sent to the Agent and Councill in 8ber [2] last being interrupted at Balasore and sent to the late Nabob, the contents of which he soon understood by meanes of the Xtian [3] inhabitants here and was not a little displeased and incensed against us thereupon and ordered an extraordinary force away to Chatgaum [4] supposing that the ffleete were designed thither which in a few days after accordingly arrived from whence they sent away letters [5] both to the Nabob and us advising of their arrivall and of their readiness to assist him against the Arrakanners according to contract but because they were not entertained with that freedom as they expected they weighed anchor within 6 or 7 dayes after their arrivall and before the Nabob's answer could arrive which otherwayes if they had stayed but 3 or 4 dayes longer Boramull [6] would have arrived with orders to treat with them and in all probability would have concluded the business soe that they might have returned to Calcutta againe; 'tis most certaine if they had stayed for an answer our ffactory here had not been seized.

Sirs, if it may not be presumption in us to offer our opinions, we conceive this to be the only time for settling the Rt. Honble Compy's affaires, having the opportunity now of making use of a just and honest Suba and 'tis the opinion of many persons that the King hath ordered [7] him to inquire into the truth of the English business and to inform himselfe where the wrong lies and to give them encouragement, soe that if we lett slip this opportunity when we have soe good a Suba and one that hath promised to grant you whatever you desire, 'tis to be feared we shall never meete with the like againe, and if Yr. Honr. &c shall think it convenient to call us away or continue us here upon the arrival of this, please to intimate

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[1] Pass, permit or license. [2] October. [3] Christian.

[4] Stewart does not mention this.

[5] Job Charnock and Council wrote "And on the 21st (i.e. of January 1689) Capt. Heath called a consultation whereat it was debated whether it would be convenient to take Chittagong, and all things considered it was concluded in the negative: after which it was urged that it was for divers reasons highly requisite to write to the Nabob and advise him of our arrivall there with our fleet, purely to serve him, and speedily to desire his finall answer thereabout." (Heath objected but) "however consented that a letter might be wrote to give notice of our arrivall which was accordingly done" (Hedges' Diary, Vol. II).

[6] See Introduction to this Part.

[7] There is no other record of this though it is probably correct.

your pleasure herein and we shall accordingly proceed in the governing of ourselves.

We had secured neare rups 4000 of ye Rt. Honble Compy's estate some time before our troubles came upon us and if our Vacqueel Gungaram[1] had not been a treacherous fellow and discovered our house[2] to the Government we might have secured most of the Rt. Honble Compy's estate, the safety of our persons lying at that time at the pleasure of his tongue: he hath all along brought us into greate inconveniences and hath become the sole instrument of all our affliction and misery: the last disgrace we suffered through his meanes was the carrying of us to the common Jaile[3] amongst theeves and murderers, wherein he might have avoided it is plaine for the spending of rups 100 which we were forced to give after one whole night & day's lodging there: to have dismissed him the service we were afraide while we were in ye tyrannicall Suba's hands, but we were no sooner delivered over to ye Kings' duan and sensible of our release but we dismisst him and sent for our former Vacqueel Lolmund who readily accepted of our service at the former wages, rups 52 per mo. soe that our expenses with frugal management after the seerpaw and redemption fees[4] are satisfied will by computation amount to rups 200 or 250 per month, for we have stinted ourselves to a very small retinue and all other charges proportionable intending to live as privat as possible until Yr. honr's etc's further orders: within a few days we shall endeavour to get out a dustick or pass from the Nabob for Mr. Henry Hanley's and Company's voyage to Balasore,[5] we thought it convenient (? not) to be overhasty therein fearing that the Nabob might take it ill that after soe much favour showne us we should be in such greate haste to be gone.

We very earnestly often urged the King's duan[6] to give his letter of invitation and encouragement to your honr. etc but he still replied that it signified little and was of noe value, that the Suba's writing was sufficient, but that upon your arrival in the Bay he would give you what perwannas you should desire and bid us write to yr. honr &c to rest assured of his favour.

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[1] Ganga Ram is a common name; but it is not impossible that this man gave his name to Gangaram Bazar in Dacca town.

[2] This would seem to mean that they had secretly moved from the factory to some other building in view of expected trouble.

[3] This was, I believe, to the east of the Fort, which stood where the Jail and the Lunatic Asylum now are.

[4] A present was evidently expected on release, as well as some sort of fees,

[5] This helps to identify Hanley with Stanley.

[6] He may have been afraid of mixing himself up in this matter. It is not clear if Kifayat Khan was King's Diwan so early as this: he probably was.

We have herewith sent you both the Nabob's perwannas and their translates copies of which we keep by us chauped [1] by the Cozze [2] of this citty which is the needfull at present, crave leave to subscribe,

Honble Sirs. Your very humble and Obdt servants
Charles Eyre [3]
Roger Braddyll [3]

To the same

DACCA 6th August 1689.

* * * * * * *

Sirs, Our greatest happinessee (for which we have rendered God our most humble and hearty thanks) was ye removal of that wicked old man [4] whose continuance with his severity towards us, until the arrival of his honr's arrasdast [5] would have layne most of our compy in ye grave, he was a person of so covetous a humour and of such base principles that we have reason to feare if the Arruzdast [5] had reached his hands in his prosperity [6] ' twould but the more have strengthened his greedy apetite as being made sensible thereby of your tender care and affection for us and consequently would have caused him to have inflicted greater punishment upon us.

* * * * * *

The Nabob's duan, Coja Labeeb,[7] who commended us that we kindly objected against him and bid us pitch upon the person that we were willing to have in the Government of Hugly which we did accordingly and named to him Meir Ally [8] Eckbar, the former Fouzdar, as being a person all along approved by the Agent and Councill for his moderate and mild Government.

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[1] Sealed or stamped. Cf. Chaupa Mahal in the first instalment of these diaries.

[2] Qazi, who at that time exercised judicial functions.

[3] Eyre and Braddyll were sent to Dacca on a special mission by Charnock (see Introduction to this Part). Mr. Watts, the permanent Agent at Dacca, had left and was probably taken to Chittagong and Madras by Heath : for this reason there is no mention of any one but Eyre and Braddyll. For Braddyll see note under Charles King above. He afterwards went to Madras and became a Member of Council there. Cf. note 2 on the first page of the Introduction to this instalment.

[4] See Introduction to this Part.

[5] Petition or memorial.

[6] It probably means that by this time the Nawab Bahadur Khan had received his orders to leave Dacca.

[7] I can not trace him.

[8] Ali Akbar. He was appointed Governor of Hughly (see Stewart). We also find him described under the name of " Mahmoud Eckbar, officer of the said Port " (Hughly) in the Hasbul hukum of 10th Fbey. 1691 addressed to the King's Diwan at Dacca (see Stewart).

Rumours were spread of Shasteh Cawn's returning after the raines but since contradicted and that he is ordered Suba of Multan and Ebrahim Cawn confirmed by a letter from the King in ye Government here and that which is the greatest confirmation is the King's granting him Jaggeers and revenues here in Bengal. God grant he may continue for the sake of the Rt. Honble Compy whose trade under his Government may be extremely augmented : we call not else to mind save to subscribe (etc.)

Charles Eyre.
Roger Braddyll.

(Dated ?[1])

* * * * * *

Sirs, Since you have not thought it convenient to send down shipping and that fortune has frowned upon us in that we have not recd. an answer from your honrs. etc. to our severalls sent you, our security which depended much thereon hath now obliged us to provide for our departure hence, ye which we have followed closely for neare a month by endeavouring to procure the Nabob's leave and dustick, without which we run a greater risk by going than staying, for if we should faile in our attempt and be taken we doe as good as acknowledge ourselves criminalls and consequently shall suffer severely, wherefore in 3 or 4 dayes if a dustick is not procurable 'tis approved and agreed off by us all[2] as most save[3] and credible to leave the ffactory divide and leave[4] obscurely in the citty or places adjacent[5] till an opportunitty offers for our departure, our Vacqueel still flatters us with the probability of procuring a dustick but ye times are dangerous and will not admit of any longer delay, we must each of us shift for ourselves.

To Elihu Yale etc etc.

Dhacca 28th Feby : 1689-90.

Sirs,

The 20th past month by French conveighance we recd. your honrs &c letter of the 17th 9ber[6] with duplicate of the

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[1] This letter was written after a rumour reached Dacca that the King's order had come to expel the English and destroy their factories, confirmed by a letter from Mr. King at Patna who had just been put in prison and beaten.

[2] There were evidently more persons than Eyre and Braddyll : perhaps Stanley and Ravenhill were still there.

[3] Safe. [4] Live. [5] Evidently they had friends.

[6] November.

former annexed and his honr's letter for the Nabob which we should have delivered according to your method prescribed upon its arrival had not His Excellency been employed in the pleasures of hawking and hunting in the which he takes greate delight and is so often addicted to.

* * * * * *

It any complaint had been made, the force of his former order given him in Cawn Jehoan Behauder's [1] time wd. have bore him out, it probably not being repeated by our new Suba here, he not expecting any shipping wd. arrive, in that port (Balasore) so suddenly.

(*The letter goes on to say that in an interview with Chas. Eyre the Nawab was very courteous but refused to allow trade (as the king had forbidden it) until the King's order should come, which he said*[2] *he had asked for.*)

We presume a person of those good qualities which he is endued with cannot incur the King's displeasure so as to hazzard the loss of his employment (whereas his predecessors took all ye methods tending thereto) but on the contrary he hath the commendations of all people for a person just and moderate in his government and concerns himself not in the least in ye King's business [3] any further than his employment obliges him to, but what belongs to the Duan, the King's chiefe minister under him.* is solely left to his management which hath endeered him wholy to the Nabob's will and pleasure, whereas, his predecessors were of a more proud and insolent spiritt and always opposing him in the King's business to the greate prejudice of his revenues,[5] the which with many other outrages committed by them gave him just occasion to informe against them to the King which occasioned his just displeasure against them.

* * * * * *

We have been truly informed that, upon the arrival of ye King's late order [6] for the persecution of the English, Mr. Wm Davenant,[7] one of the late imprisoned gentlemen, and some others exhibited a petition to the Dutch Directore for protec-

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[1] See Introduction to this instalment of the diaries.

[2] It would seem to be true that he did all he could for the English.

[3] This means that he did not meddle with things that were under the jurisdiction of the King's Diwan.

[4] By the Moghul constitution the King's diwan was independent of the Nawab, although it may often have appeared that he was under him.

[5] The Diwan was responsible for the collection of the revenue.

[6] This is the order of September 1689 referred to above.

[7] Not mentioned elsewhere. He may have been a Seaman, except that he is described as one of the gentlemen. There was a Nicholas Davenant, 4th of Council at Murshidabad in 1683, who may have been a relative.

tion from the violence of the Moores which it seemes was accepted off after some debate, but presume not out of any respect to their persons nor ye protestant religion (which we suppose they will pretend and devour a world of paper and ink about) but because they know they should run the hazzard of no inconvenience thereby and that the Nabob was generously inclined to dispense[1] with the order otherwise they would not have been so liberall of their charity for 'tis apparent since the commencing of our late differences with the Moores they have not been backward in using all methods[2] tending to the ruin and destruction of the Rt. Honble Compy's interest, credit and reputation in these parts.

Dhacca, 10*th July* 1690.

* * * * * *

It seems the Nabob formerly to corroborate his addresses to the King on behalf of the Rt. Honble Comp. that they might not be fruitless in acquiring the King's favour and good opinion sent up the writing[3] we gave to Behauder Cawn (by order of the Agent and Councill) to assist them with our shipping against Arrackan. provided our demand as to a fortification etc. and the 12 articles[4] might be complied with as your honrs &c may perceave by the Hoosbool Hookum some mention made thereof: but that's no rule we are obliged to walk by now. the case being quite different and that agreement voyde, it not being put in execution neither do we believe 'twill ever be required of us.

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Diary.

19*th August* 1690. Visited Mamood Sheriff,[5] the King's Buxy.

24*th Sept.* Being severall times put in mind within this month by Mell. Haddee,[6] Nabob's duan, to write to the Rt. Worshpll. Agent etc to know what shipping they would spare the King in the expedition against Arrackan and now lately receiving orders from the Agency hereabouts I answered him accordingly. that when we contracted with Behauder Cawn we

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[1] Ibrahim Khan probably disobeyed the order as we do not read of another seizure following it.

[2] See Stewart "The Dutch and French took advantage of the dispute particularly the former."

[3] This is evidently the promise which Capt. Heath referred to (see Introduction) as having been given by Eyre and Braddyll.

[4] See Introduction.

[5] He may be the Mir Muhammad Sharif who was Governor or Faujdar of Hughly in 1663.

[6] Malik Hadi.

had a sufficient number of ships but now we had not any notwithstanding we were always willing to serve the King and ye Nabob on all occasions when in a capacity to do it.

It was most certainly a great omission in Capt Heath in not prosecuting the design of Arrackan agreed on in Behauder Cawn's time. in all probability 'twould have been a meanes to have settled the Rt. Honble Compy's affaires without any further trouble.

Oct. 1*st.* A rumour was spread in the Citty of Shasteh Cawn's returning hither Suba of this place and that he had proferred the King 3 crores of rupees. which is upwards of 3 millions of pounds sterling, to effect it.

Oct. 6*th.* (Mons. *Gregory was the French Chief*[1] *at Dacca Kefait Caum* (*Kifayat Khan*)[2] *the King's Diwan had his mansab increased from* 900 *to* 1000).

Considering the great want of repaire this factory hath been in for these five yeares past, which three dayes since had like to have been wholly swallowed up with a violent storm and raine which carryed away whole trees by ye rootes and blew down several houses in the Citty as well brick as thatch with ye loss of a great number of boates, 18 yeares time not being able to call to mind ye like, and that the delawne,[3] the chiefest room in the house, was ready to fall. several of the timbers being started and broke. in soe much that living therein or doeing any business is very dangerous, I thought fit to give notice hereof to the Rt. Worshpll Agent and Council that a speedy remedy might be applied as well for that as the security of the whole mansion and because the charge will very much exceede that of the usual repairation, I doe not think fit to procede herein till I know their pleasure.

Oct. 20*th.* Understanding that Aga Hossain[4] was ordered Governor of Ballasore and had taken his leave of the Citty and gone as far as Putterguttah[5] I immediately gott a swifte boate ready to visit him. when I arrived some small time before his departure. desiring after a few complements that he would please to favour and assist our people in their business. which he promised he would.

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[1] It is not known when the French came to Dacca. It must have been between 1666 and 1690. Their factory was on the site now occupied by the Ahsanmanzil.

[2] This man was Mir Ahmad, son of Mir Baghdadi, and his title was Kifayat Khan. He was removed from Bengal in 1697-98 and soon after became Diwan of the Khalisa. He died in 1698-99, when about to start for Dacca again on being appointed Naib Nazim by Prince Azimushan. See Wilson's Old Fort William, Vol. I, p. 50. Azimushan apparently did not reside in Dacca till 1702.

[3] Dalan = Hall. [4] I can not trace him.

[5] Pattarghatta, on the Ichamati river, which was the high road to Hughly and Calcutta.

3*rd Novr.* Perusing said account and finding it not to amount to $\frac{1}{4}$ of ye value the Nabobs at their first coming used to be presented with and considering the many favours and kindnesses this present Nabob Ebrahim Caun hath lately conferred on the Rt. Honble Comy. by inviting the Agency downe from the Fort and officiating as their vacqeel to the King by his often applications on which a Husbool Hookum[1] was granted for their free trade forgiving past injuries. also what favours may be expected from him in ye future I thought it very convenient. considering the present must be forborne untill the arrivall of the horse. to write away to ye Agency immediately, humbly desiring they will please to consider of a present a little more suitably being informed by the Mutsuddies this now ordered will not at all be acceptable nor pleasing, he being made sensible of what we formerly used to give. and the Dutch[2] present being large is too fresh in his memory to think of any thing less from us.

18*th Novr.* The French have lately complained[3] to the Nabob how the Rt Worshpfll Agent &c had wounded severall of their men and forced a couple into their servis notwithstanding the French Director's making demand of them, at which newes the Nabob was very much displeased and said notwithstanding so much kindness shown ye English in inviting of them down to Bengall and writing up to ye king in their favour they were now commencing a new quarrell and ordered Mullick Hadee to write to the Fouzdar[4] to enquire into the business.

25*th Novr.* Received a Generall[5] from the Agency intimating that they were sensible of the Nabob's kindness and wished they had more suitable things to present him but that the Rt Honble Compy in their advices had blamed them for the abominable large pishcashes at Dhacca and the great expense yearly made at that Durbar and have ordered that frugality be used for ye future. being resolved not to allow as formerly, but that I might add to ye broad cloth ordered 4 half pieces more (which makes with ye former parcell 10 pieces(2 pieces of fine per * * tuanoes[6] two pieces of course[7] and

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[1] The Hasbulhukum given by Stewart is dated Feby. 1691 which was after the above was written. There may have been another of earlier date.

[2] For other Dutch presents see the first instalment of the diaries. The Dutch evidently tried all along to outbid the English in this respect.

[3] Refers evidently to an occurrence in Hughly.

[4] The local Fauzdar of Hughly.

[5] A general letter, i e. an official letter. General as opposed to special or private.

[6] I find this should read 'Perpetuannoes.' The word is derived from Italian or Spanish "Perpetuo" (Latin Perpetuus). So called from its lasting qualities. It was of wool or cotton and wool. (See Murray's dictionary).

[7] Coarse.

two pieces of cloth rashes [1] (*some china and fruit were added later*).

4th Decr. * * * * which were carryed accordingly along with the rest of the things to ye Nabob's and presented to him, who was extraordry. well pleased with the brass guns and desired a couple more, but for images he is a great enemy to and ordered his Nazar [2] or Chief Eunoch to break them in pieces, which Mallick Haddee endeavoured to prevent by desiring the Nabob to return them, but he replyed God does not approve of Images to be kept in a house and that he had done him good servis in breaking of them, and returned the screenes and the pictures with glasses before them, with the afftoa [3] and Chillumchee [4] (it being coloured glass) Glass handled knives, with most of the China ware, notwithstanding Mullick Haddee and the Vacqeel desired he would return none, that we did not bring them for that end: but he said what he had returned he had no occasion for and that what he had accepted was for the sake of the English and out of ye respect he had for them: thus having concluded the Nabob marched towards the gumns which he had planted by the river side of his garden.[5] where he sate in his chaire, as I'm informed, till 'twas dark looking upon them and spoake to Mall. Haddee, his duan, that we write to his Worship etc. for 2 more with their carriages which will be very acceptable if procurable in lieu of the screenes &c.

Decr. 8th. French complaint found false.[6]

April 1691. *Orders were received from the King that the English should pay the "accustomary piscash of Rs.* 3000 *yearly.*[7]

Mahmud Sadak[8] *was Fauzdar of Jattrapur.*[9]

[1] Connected with Italian Rases silk, satin or fine serge. A smooth textile fabric made of silk (silk rash) or worsted (cloth rash). (See Murray's dictionary).

[2] Although the chief Eunuch was Nazir the latter word is not equivalent to chief Eunuch: it means Inspector or Supervisor. Prince Mahd-Azam's Nazir was also an eunuch (See first Instalment.)

[3] Aftaba, i.e. a water jug or ewer.

[4] Basin or bowl. Cf. letter from Hughly to Balasore in 1678: "I request you to get made for me a handsome middle sized Aftaw and Chillumchee of Tetanague well set out with brass about the edges" (Bowrey, p. 199).

[5] This was evidently on the river side and was most likely at Nawab Shaista Khan's place by Babu Bazar Ghat: the place was formerly known as Katra Pakartali. It was certainly not the Lal Bagh.

[6] See entry of 18th Novr. above

[7] This was the amount levied by Mir Jumla and Shaista Khan. Stewart writes that Mir Jumla "insisted upon their continuing to pay the peishkush or annual offering of 3000 rupees, which had been established by the Fauzdar of Hughly during the late civil war."

[8] I can not trace him elsewhere.

[9] Jattrapur was a thana and is still known locally as Thana Jatrapur. It is mentioned both by Hedges and Tavernier as being on the route to Dacca. It lies on the river Ichamutti in the Harirampur Police Station.

Part III.

The interval between the second and third instalment of these diaries, viz. from 1691 to 1736, is considerable, and the gap must be filled from other sources.

In 1696 Prince Azimushan, son of Bahadur Shah, succeeded Ibrahim Khan as Viceroy, but he did not make Dacca his Headquarters till 1702[1]. In the meantime the work in Dacca was carried on by a Deputy. In a note to the second instalment I have stated that I found in the Tippera Collectorate evidence that in 1698 one Rahmat Khan was Nawab of Dacca, that is, he was Prince Azimushan's Deputy. In 1701 the Emperor appointed Kar Talab Khan[2] to the post of Diwan of Bengal with the title of Murshid Kuli Khan. The latter's successful administration of the revenues made Azimushan jealous, and he endeavoured to procure his assassination in the streets of Dacca.[3] This led to Murshid Kuli quitting Dacca (in 1703) and setting up the Diwani offices in Mukhsusabad which he renamed Murshidabad, after himself. On hearing of this the Emperor directed Azimushshan to leave Dacca and live in Behar, which he accordingly did, leaving his son Farukhsiyar as his Deputy, with Sar Baland Khan[4] to assist him. Soon afterwards, in 1706, Farukh Siyar himself left Dacca for Rajmahal, going afterwards to Murshidabad: and thence forth Dacca ceased to be the headquarters of the Bengal Government, only a Naib Nazim remaining in charge, and sometimes at a later stage only the Deputy of a Naib Nazim.

On the accession of Bahadur Shah to the throne of Delhi his son Azimushan continued to be Nazim of Bengal, but Murshid Kuli Khan was appointed Deputy or Naib Nazim, while still holding the office of Diwan, and when Azimushan was killed in 1712 he became Nazim or Viceroy, thus uniting the offices of Nazim and Diwan in violation of the Moghul constitution. He was confirmed in these offices and given the title of Jafir Khan by Farukhsiyar when he became Emperor, and appointed Mirza Lutfullah, to whom he gave the title of Murshid

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[1] See Wilson's Old Fort William.

[2] There used to be a mosque and Fish Bazar in Dacca called by the name of Kartalab Khan. It was afterwards in possession of Ladli Begum, daughter of Sarfaraz Khan. The mosque is still known by his name but is more often called the Begum Bazar Mosque.

[3] See Stewart and Riazus Sulatin.

[4] This man acted as Deputy Nawab of Bengal once when Murshed Kuli Khan and Farukh Siyar went to the Emperor's court. He received a present from the English in return for a parwana for free trade. (See Wilson's Early Annals, Vol. I.)

Kuli Khan. and who had married his grand daughter, to be Naib Nizam of Dacca.

The Nawab Nazim Murshid Kuli Khan died in 1726 and was succeeded by his son-in-law Shujauddin, who confirmed Murshid Kuli, his own son-in-law, as Naib Nazim of Dacca. Murshid Kuli employed as his assistant [1] at Dacca one Mir Habib, who conquered Tippera and afterwards became notorious for deserting to the Maharattas. One Aga Sadaq whose help had been invaluable in the conquest of Tippera was made Faujdar of that territory.[2]

In 1734 Murshid Kuli Khan was transferred to Orissa. and Sarfaraz Khan. son of the Nawab Nazim Shujauddin was appointed Naib Nazim of Dacca : but he, preferring to remain in Murshedabad, appointed one Ghalibali Khan to administer Dacca for him with Jaswant Rai [3] as his Diwan. The latter was a most capable officer and the revenues of Dacca flourished under his charge. Not only that, but the author of the Riaz-us-Salatu says : " Putting forth laudable efforts to keep down the selling rates of food grains, and effecting cheapness in their prices, he threw open the western gate of the fort of Jahangir nagar which Nawab Amirul Umara Shaista Khan had closed, inscribing on it a prohibition to the effect that no one should open it until he had succeeded in reducing the price of good grain to one seer of the bazar weight per Dirham as was current in the Nawab's time."

The successor of Ghalib Ali Khan took over charge in 1737. He had been daroga of the Nawara (Superintendent of the Fleet) at Dacca. He married a daughter of Sarafaraz Khan. He was an oppressive ruler. In his time Jeswant Rai resigned the Diwanship.[4] So far the diary below agrees with the historians of the period. But the former calls him Syed Reza Khan. whereas the latter say he was Murad Ali Khan, son of Syed Reza Khan by Nefisa Begum, sister of Sarafaraz Khan. This discrepancy is apparently irreconcilable, especially as the historians tell us that Syed Reza Khan died some ten years before. It is extremely unlikely that the English on the spot would make a mistake in the name. and the only explanation would seem to be that Murad Ali came to be known by his father's name The case is not without parallel as we saw above that Nawab Murshid Kuli Khan's grandson was called Murshid Kuli Khan.

It was at this time that Raja Raj Ballabh came into prominence. He belonged to a family that had settled in Bikram-

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[1] Stewart calls him Diwan.

[2] In 1755 he was employed by Sirajuddaula to assassinate Nawab Husainuddin Khan in Dacca. (See Sairul Mutakherin).

[3] The Translator of the Riaz-us-Salatu calls him Jasunat Rai.

[4] The author of the Riaz writes: " Munshi Jasunat Rai who had acquired a good name amongst the people, apprehending that his reputation might be tarnished, resigned his office of Diwan."

pur. He came to the notice of Murad Ali Khan (or Syed Reza Khan) when the latter was Daroga of the Nawara and he was accountant (Jama Navis) of that department. On Murad Ali getting his promotion. Raj Ballabh became Peshkar of the Nawara, and then apparently succeeded Jaswant Rai as Diwan. In 1753 he became Deputy Governor or Naib under Nawazish Muhammad, son-in-law of Ali Verdi Khan, after the assassination of Husainuddin at the instigation of Sirajuddaullah. He was an able administrator and at the same time acquired much wealth and property for himself. The large pargana of Rajnagar came into his possession : it was made up of portions of surrounding parganas which apparently Raj Ballabh succeeded in transferring to himself. At Rajnagar he had some very fine buildings which have now unfortunately disappeared into the river Padma. In 1756 his son Krishna Das fled from Dacca with his family and a large amount of treasure (presumably his father's) and took refuge with the English at Calcutta. This led to the hostilities in Calcutta and the notorious Black Hole incident.

At the beginning of 1739 we find from the diary that Abdul Fateh Khan was Nawab (Naib Suba) in Dacca. A change was to be expected at that time as Sarafaraz Khan became Nawab Nazim and so vacated his appointment as Naib Nazim of Dacca. Historians. however. do not mention the name of Abdul Fateh Khan.

When Ali Verdi Khan (Mahabat Jang) became Nawab Nazim (1739-40) he appointed his son-in law Nawazish Muhammad to be Naib Nazim of Dacca, and Hossain Kuli Khan was sent to Dacca as his Deputy. Sirajuddaulah. who was Ali Verdi's grandson, at the same time became Daroga of the Dacca Nawara. but there is no evidence that he lived in Dacca. Raj Ballabh must have reverted to his former post at this time for we find one Brindaban the Diwan in 1744.

In the Sair-ul-Mutakharin we read that one Gokul Chand formerly a servant of Husain Kuli Khan, had been Collector General (diwan) and Commissary of Dacca : he turned round on his old master and got him dismissed through some influence at Murshidabad. Yasin Khan. the Faujdar of Dacca. became Nawab in his place : but Hossain Kuli Khan went to Murshedabad and through the good graces of Ghasiti Begum. wife of Nawab Nawazish Muhammad. was reinstated. He then proceeded to ruin Gokul Chand and appointed Raj Ballabh in his place. Soon after Hossain Kuli Khan left Dacca. appointing his nephew Husainuddin Khan. to act in his place. Dacca was thus reduced to the Government of a Nawab's deputy's deputy's deputy.

The diary below touches upon the anxiety felt at Dacca on account of the Maharatta invasions. The reason for the Maharattas invading Bengal is not clear : but whatever it may

have been they soon overran the province. Mir Habib with a body of cavalry arrived at Murshedabad in the beginning of 1742 and plundered the house of the wealthy Jagat Seth, capturing Murad Ali Khan and Raja Dulabh Ram.[1] He also took back with him his own brother, Mir Sharif, who was then living at Murshidabad. The war continued with varying success for some years. In the cold weather of 1745-46 (1158 A.H.) Mir Habib again attacked Murshidabad, but he had only time to ravage the suburbs, Stewart tells us, before the Nawab's army came up and forced him to retire. After this the Maharattas left Bengal for a time, which accounts for the entry in the diary of April 1746 to the effect that there was no longer any fear of them.

It is interesting to note that in 1740 the wives and children of Nawab Sarafaraz Khan were sent by Ali Verdi to Dacca, and a handsome allowance was settled on them. Up to 1820, at least, his descendants were enjoying that allowance in the shape of pensions. One of his daughters was Ladli Begum who in 1777 was in possession of Kartalab Khan's mosque and Bazar. Her two daughters, Pannah Begum and Haji Begum, received an additional allowance as compensation for the Bazar being resumed by Government. One of Sarafaraz Khan's sons—probably the eldest—was called Nawab Shukurullah Khan, who had the following children: Ejazzali Khan, Nasruddin Haidar Khan, Husain Bukhsh Khan, Hadi Ali Khan and Fakhrunnisa Begum. Of these Nasruddin had a son Mirza Ibrahim Ali Khan: Husain Bux had two children—Mirza and Tayeba Begum; while Hadi Ali (who married Pannah Begum) had a son, Bahadur Ali Khan and a daughter Sahib Begum. I am unable to say whether there are any descendants of any of these now alive.

As regards the English in Dacca at this period there is nothing of importance to record. The amalgamation of the two Companies into the United East India Company at the beginning of the eighteenth century left them unaffected. The diary closes before the exciting events of 1756 took place. The only matter of interest to the Dacca people was the removal of the factory from Tezgaon to the town.

In the first instalment I said the original factory was probably at Tezgaon. I ought to have said it was certainly there. Besides the evidence of Hedges, we have the letter of September 1689, in the second instalment, showing that the factory was not in the city. Further, we find from papers in the Collectorate that there were at Tezgaon several bungalows and a building called "the Factory House at Tezgaon" in the year 1775. The change to the town was apparently made just before the following diary begins. In a general letter to the Court, dated 29th January 1737, we find the entry: "100, Refer it to the Com-

[1] This is Durlab Ram whose son Raja Raj Ballabh in 1771 petitioned Government for his father's Jagir.

pany whether the Factory House at Dacca shall be finished as Mr. Mandeville proposed 28th December: Mr. Cooke has laid out some money on it." By August 1737 it would appear that the removal had been completed, for the writer and writes of the "workmen at Tezgaun" as if it were a place different from the place where he was writing.

I may note here as an item of interest that the first cantonments in Dacca were situated in Mauzah Baigunbari. which adjoins Tezgaon. The Chandmari (shooting range) is still pointed out, but all that remains of it is a large mound. evidently the old butts, in and near which quantities of lead used to be found. The remains of an old road with a broken bridge. connecting the cantonments direct with the Mymensingh road still exist. The present Ramna was constructed in 1825 by Mr. Dawes (the then Magistrate) as an open space between the old and the new cantonments.

Volume II.

29*th November* 1736. At a consultation, present Francis Russell[1] Esq., Supervisor and Chief. Messers John Freame.[2] William Price,[3] Thomas Feake[4] and Bernard Bouket.[5]

Upon Mr. Russell's arriving yesterday morning as Supervisor and Chief for the time being with orders from the Hon'ble Board of Calcutta to inspect into the conduct of Mr. Thomas Cooke, the occasion of said order being from a complaint transmitted to the Govt. and Council by Messers Freame, Feake and Bouket setting forth that the said Mr. Cooke[6] had, they believed embezzled the Honble Company's cash as well as done many other unwarrantable things. Mr. Russell now called us together to enquire into these matters and told us that he was affraid our suspicions in relation to the cash would prove true, for that he had yesterday morning, at the same time that he took charge

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[1] He succeeded to a Baronetcy later. He was great grandson of Oliver Cromwell. He became chief of Cossimbazar and died in Calcutta on 26th Feby. 1743. (See Wilson's Old Fort William.)

[2] He became Chief in September 1738 and died in Dacca in September 1740.

[3] He was no longer in Dacca in November 1738, but whether he left or died is not known. I can not trace him elsewhere.

[4] He was a son of Samuel Feake who was Governor till 1723 (see Wilson's Early Annals, Vol. III). He became chief of Jugdea (in Noakhali) in February 1742 and replaced Moore as Chief of Dacca in April 1745. He died and was buried in Dacca on 7th October 1750 at the age of 32.

[5] I find several persons of the name of Boukett mentioned but not one called Bernard.

[6] He married Avarinha Child (on 1st Septr. 1716) who died in Calcutta in April 1728, but I cannot find out anything more about him. He cannot be the same Thomas Cooke mentioned by Wilson in his Old Fort William between 1755 and 1758.

of the Factory, demanded of Mr. Cooke the cash account with the balance thereof, but Mr. Cooke entreated he would wait till this evening which Mr. Russell did agree to having first ordered Ensign Nairne to change the guard and centinels at each gate out of the party he brought with him and that nothing pass out of the Factory without his leave. * * *

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Mr. Cooke being then ill of the gout and confined to his chamber by it sent his assistant, Mr. Medly, with the cash account and the keys of the cash chest and Mr. Price was ordered to see the cash weighed of agreeable to the ballance, Duss Messa [1] Rs 88276 : but when said chest came to be opened in the presence of Mr. Price, Mr. Medley, Mr. Cookes banian and many others, there was but 13,000/-Rs Medrass to make good this large Ballance, which occasioned a deficiency of cash Duss Messa Rupees 75276. * * * * Mr. Russell went himself and acquainted him he was dismissed from any further service in the Company's affairs here.

12*th December*. Mr. Russell having been greatly importuned to visit the Nabob [2] in so much that the Duan, Justmontray, [3] declared to the Vacqueel that if this piece of respect was not showed him he should look on himself as slighted and that we must not expect his helping hand to the currency of our business : but as Mr. Russell tells us he should desire leave to return to his station in Calcutta as soon as what relates superv. ship is ended and the Factory affairs put in a proper way so he thought it for the Honble Company's interest to evade this visit since the same would be required of the next Chief which would occasion a double expense and each visit if not very prudently managed would cost about three thousand rupees.

Agreed that Mr. Russell decline if possible the visiting the Nabob for the foregoing reasons and that he direct the Vacqueel to give such answers to this affair as may put a stop to their troubling us any more on this account and to prevent their being displeased with our refusal it may not be amiss to present the Duan with a looking glass on some proper occasion.

December 1736. List of military stores belonging to the Dacca Factory :—

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[1] This is Das Masha, or ten mashes. A masha was a weight in Troy measure equivalent on the average to 15½ grains. There were generally twelve mashas in a tola, but in this case the rupees were only ten mashes each. (See Pinsep's Indian Antiquities.)

[2] He was Ghalibali Khan at this time.

[3] Called Jeswont Roy by Stewart and Jesunat Rai in the Riaz. He was Nawab Jaffir Khan's Secretary and Tutor of Serfaraz Khan who was the Naib Nazim of Dacca at this time. He was put in entire charge of the revenues.

3 Brass Swivel guns.
2 Mortars.
3 long swivel guns.
4 large brass swivel bhunder-busses.
10 small, 3 of which are iron.
2 Iron canon.
10 spare bayonet pieces.
4 carboins.
5 Pistols.
5 swords etc., etc.

16*th January* 1737. Cassenaut[1] the Godown Banian was on account of an old dispute carried this morning from his house and put into close confinement at the Duan's and as we are informed chiefly at the instigation of our head Ruffagur[2] Mahmud Jean's brother: we sent for said Ruffagur to reprimand him for suffering any of his family to appear at the Durbar against the Factory servants, but to our great surprise he was gone and had taken sanctuary in the Duan's house.

1*st February*. George Mandeville,[3] Esq. arrived here the 30th ult.

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Mr. Russell having delivered over all papers and accounts to George Mandeville Esq. whom the Honble Presdt. and Council have appointed chief of this Factory * * will leave this place tomorrow.

4*th February*. Jessmutrah[4] the Duan of Dacca having it in his power to be greatly serviceable or disserviceable to us as he is pleased or displeased, we are of opinion that the Chief ought to cultivate a Friendship with him and that now he has just taken charge of the Chiefship he should make him a voluntary Present.

12*th February*. Taking into consideration what Military are necessary to be kept at this Factory, it appears that it is necessary to have centinalls[5] at the doors of the treasure godown and other warehouses of the Factory,[6] as well as at the gates and that some of the adjacent petty Chowkeys[7] stopping boats that are bringing the Honble Company's goods, a party of soldiers are often necessary to be sent to clear such goods. Agreed therefore that we keep one Ensign, one serjeant, 1 corporal, one Drummer and 17 Centinalls and that we send the remainder of the Military to Calcutta.

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[1] Kashi Nath.

[2] Raffugar, i.e., a darner. These men could withdraw a broken thread from the finest muslin and replace it without the change being noticed.

[3] He was junior at Kassimbazar in March 1718. He was Zemindar or Collector of Calcutta before coming to Dacca.

[4] Jaswant Ray.

[5] Sentinels or guards.

[6] See Introduction to this Part.

[7] Probably customs stations; in 1808 Enayatganj and Alamganj were described as Custom House Chowkies.

Four soldiers being European Portuguese of the number drafted out to return to Fort William this day diserted us. Agreed that the Vacqueel go to Jesmunt ray and desire that if they are within the district of the Dacca Government they may be delivered up to us.

20th March * * * "a great fire which burnt great part of this city." * * * * * * * *

Jesmut [1]rae having a grandson born it is thought for our Master's interest that the Vacqueel do go and congratulate him and carry a present as usuall on such occasions which will amount to about 100 Rupees.

8*th April* 1737. Messers Mandeville & Freame visitted Goolab Bullub Caun, [2] the Nabob of Dacca, and were received with great civility and fair promises.

29*th April*. There having been a general table kept ever since the arrival of Mr. Mandeville and the Company allowing 700 Rupees per year for Factory provisions. Agreed that three months allowance for the time Mr. Mandeville has been here be paid out of the Honble Company's cash.

7th May. The Nabob having sent to the Factory for some copper and having been told the Company had none took it very amiss and said how could we expect his friendship when we denied him such a trifle. Agreed we buy and send him what he wants, being about $3\frac{1}{2}$ maunds, looking upon it our Honble Masters interest not to have him disobliged for such a small matter.

5*th June* 1737. There having been in some of the preceding months given to Serasdee Mahmud [3] the Tautconna [4] and Mulbus coss[5] Droga [6] presents of sundry goods out of Honble Company's warehouse which were in the following sortment and estimated to him at the following prices:

Broad cloth, fine yellow	..	..	120
,, ,, Aurora	..	..	224
,, ,, ordinary	..	..	180
Velvett	..	..	56
Stiff damask crimson 82/8			
yellow 63/12	..	..	146/4
			726/4/-

[1] Jaswant Ray.
[2] Ghalib Ali Khan.
[3] Serajuddin Muhammad.
[4] Tat-khana, something to do with the weavers.
[5] Malbus Khas, i.e. an investment of fine muslins formerly furnished from Dacca for the Royal wardrobe at Delhi. (Wilson's glossary.) In 1781 Mr. Holland reported that the office had long been extinct.
[6] Daroga or Superintendent.

He has since frequently sent to us and acquainted us that the above goods are of no use to him and that as the persons who were his predecessors in the 2 posts he enjoys used to have 2000 rupees per year between them he insists on our taking back these goods and give him ready money in the room thereof and we therefore considering that as all the Delolls [1] Picars, [1] Washermen & Ruffagurs are all under his command and dare not come to our factory without his leave we think it our Honble Masters interest to preserve his frienship tho' at some expense. Agreed that we take back the above mentioned goods from him and pay him in ready money D.M. [2] Rs 726/4/-

24*th June*. The 9th inst. we returned the Honble Company's Pinnace with 1 Serjeant, 1 Drummer and 7 European soldiers.

9*th July*. One Mirza Sammee and one Seebdas both persons who have posts [3] themselves and great influence with Jesmut ray having for some time complained that they have not lately recd. any acknowledgements from us and therefore have from time to time thrown Barrs in our way and caused our business to be impeeded, our Vacqueel informs us that about 300 Rupees will make them both our friends. Agreed therefore that the Chief do present them with about that sum.

29*th July*. Sally Mahmud,[4] Deputy to the Mulbus cass and Tantconna Droga, expecting a present from us and it laying in his way to forward or molest our Business as he is pleased or displeased, Agreed he be presented with about 150 Rupees.

August 1737. In April last arrived here from Muxadavad one Sciad [5] Radge Caun who is contracted to be married to a favorite daughter of Saffrage Caun: he has the posts of Toapconna and Nurwarra Droga, Phousdar of Tipperary and severall other posts in this Government, he is made independent of our Nabob Gullubullub Caun with whom he has quarrelled and abused and on their mutual complaints going to Muxadavad Sciadrage Caun has got the better: this man acts here in the most Tyrannicall manner, not only in his own office but also in those appertaining to the Nabob's Government, whipping and killing whosoever refuse to give him any sums of money he demands, and this tyranny he exercises without controul and it is thought here that Gullubullub Caun will be recalled and he made Nabob. This man has sent frequent demands to the Chief to come and vissit him and make him the same present as he did the Nabob, threatening on refusall to impede all our businesse, which the Chief has hitherto evaded

[1] See First Instalment of these Diaries.
[2] Das Masha.
[3] I can not trace them.
[4] Saleh Mahammad or perhaps Saleh Ahmed.
[5] Syed Reza Khan. (See Introduction to this Part.)

complying with and since he has come down something in his demand and says he will be contented with a visit without giving a surpace and talks of the presents being Rs. 2000 and our Vacqueel tells us some of his under officers say they believe Rs. 1500 will do. The Chief yesterday offered a vissit and 500 Rs. which he refused with disdain.

10*th August.* Sciadradge Caun having come down in his demands and offering to receive a vissit to be attended with the charge of a present of 900 Rs. to him and 200 Rs. among his officers * * * * * * *
and he having been very Importunate and Troublesome even to the impeding some of our Business we think it our Honble Masters Interest to satisfy him.

18*th August.* Agreed that we send away immediately on a Budjerow that is at our gate[1] to be hired * * *
under the guard of Serjeant Everatt Cooke and 3 soldiers.

A letter from Jugdea mentions Aga Bakar[2] *as Faujdar there at this time.*

27*th August.* The 24th instant, the Nabob sent Sally Mahmud to us with a copy of a Purwanna he said was come from Muxadavad ordering him to enquire into an accusation exhibited against Munseram our head sorter for that he had some years since found on digging in his compound 2 Jars of gold Moores[3] which he had kept to his own use instead of paying it unto the King's Treasury and the Nabob demanded that we should immediately deliver up Munseram. On taking this affair into consideration we on enquiry found that Munseram had been accused 2 years agoe of the same thing which had been enquired into at that time by Jesmutrae Duan who then acquitted him and he being at this time extreamely useful to us in sorting the cloth as it is brought in by the Delolls as also considering the ill consequences of delivering up the servants of the Factory on every false and Mallicious information against them * * * we sent the Nabob for answer that the Munseram was ready to appear. * * *

The Facqueer[4] that had lived for many yeares on our wharf and which some months since we gott turned away by our Nabob's order having been at Muxadavad to complain had obtained a Purwanna directed to the Cozzee here to enquire into the affaire and if he found the Facqueer had a right to

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[1] It is not quite clear where this was, but probably it was at the wharf (see below).

[2] He was Naib at Jugdea in 1752 (see Long). Scrafton says he was Governor of Chittagong later. He was killed in Dacca as a result of the assassination of the Nawab Hossainuddin in 1754 by his son Aga Sadak (see Stewart Riaz and Sairul Mutaqerin).

[3] Gold mohars.

[4] Cf. the incident of the Sufi in the first instalment.

the ground and that a Mussulman's bones were buried there that then he should reestablish him in his right and permitt him to build a place of worship on the ground, and the Cozzee having offered in consideration of 250 Rupees to give a sunnud setting forth the Facqueer's complaint to be groundless and False and liberty for us to occupy the ground and build on it. and we considering the great inconveniency of having a Moore's place of Worship in the midst of our ground especially if our Honble Masters should think proper to have a factory house[1] built there. Agreed we do pay the Cozzee 250 Rupees and receive from him a sunnud accordingly.

October 1737. The 30th ult and 1st inst happened a storm here and in the adjacent country the most violent[2] that has been known in the memory of men * * * * The storm destroyed every boat and vessel that was on the river, and ashore blew down vast numbers of buildings and among the rest all the Honble Company's bungalows that were for the use of the Washermen etc, workmen at Taezgaun[3] and on the wharf.

3*rd December* 1737. Sally Mahmud Deputy Droga of the Mulbuscoss and Tautcouna haveing taken Mutchulkaes[4] from the Ruffagurs Nurdees[5] and Washermen etc not to serve us without leave and from the Delolls and Picars not to come to our Factory or deal with us, the Vacqueel was sent to him to know the reason of this proceeding and brot us for answer that Sally Mahmud had received orders from his master Serasdee Mahmud Droga to stop all our business till we should pay 10,000 Rs under pretence of 3 years arrears due for 2000 Rs per annum formerly paid to Chuttee naut and 1000 Rs. p. annum as a present to Serasdee Mahmud, that Sallee Mahmud said him he was sorry he was obliged to do this being afraid to disobey ye order of Serasdee Mahmud. but that he would wink at ye washermen etc working for us privately till his

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[1] Apparently no building was ever constructed on the riverside.

[2] All great storms seem to be thus described, cf. the storm mentioned in the first instalment.

[3] The writer was apparently neither at Tezgaon nor at the wharf.

[4] Muchalka, i.e. bonds.

[5] Not finding this word in any dictionary or glossary, I made enquiries in Dacca and found that one or two Nurdiyas still live in the town. I went to see one of them at work : but I have since found a note in the Malda diary which describes them better than I should, viz. "Noordeahs arrange the threads of cloths that happen to be displaced during bleaching. They work in the manner shown in the figure. The cloth wound upon a roller (nurd) is placed between two posts on the bleaching ground, and is unrolled and carefully examined. The damaged portion of it is then stretched out and being wetted with water an instrument like a comb formed of spines of the Nagphunee plant (*cactus indicus*) is drawn lightly along the surface of the displaced threads in order to bring them into their proper places." See Taylor: Cotton Manufacture of Dacca. The man I saw had the cloth held tight by boys.

master should arrive from Muxadavad which will be in a few days and then we may make up the affair with him ourselves. Agreed therefore that we employ the Ruffagurs Washermen etc in as private a manner as possible till Serasdee Mahmud arrives here.

The Nabob's haveing sent to borrow a Budgerow of us to send to Hughly and we having but one and that so damaged by ye great storm that it has not been yett enough repaired to be fit for use we sent him that for answer but he was incensed at it as only a pretence and put peons on our Vacqueel. Agreed therefore that we hire one of an Armenian for 90 Rs and lend him.

9th December 1737. The Ruffagars and Washermen haveing entered into Mutchulkaes not to work for us, but few of them could be prevailed on to assist us, notwithstanding Sally Mahmud had agreed to wink at their doing it, by reason of which our business has gone on so very slow that we seeing no likelyhood of getting any quantity of bales ready time enough for this year's shipping unless we can gett speedy relief, we therefore sent to Sally Mahmud and informed him we must be obliged to complain publickly to our Nabob and even to Muxadavad for justice if he did not immediately withdraw the Mutchulkaes, but Sally Mahmud beg'd of us to have a little more patience till his master Seerasdee Mahmud should arrive from Muxadavad which he expected daily.

16*th Decr.* Mr. John Coleman,[1] our late Surgeon having died intestate etc.

19*th Decr.* Our business still continuing impeeded and Serasdee Mahmud not being yet arrived we cant think of making any beginning for the next years Investment. Agreed therefore that we suspend that till affairs are on a more settled footing.

29*th Decr.* 1737. Seerasdee Mahmud haveing arrived from Muxadavad the 22nd instant we sent our Vacqueel to him to demand ye reasons of our business being impeeded who answered that he saw no reason he should receive less from us than his predecessor Chutteenant used to have, that the Nabob Suffrage Caun had obliged him to agree to pay more into the King's Treasury than he used to do and that he haveing been at great expence to gett himself reinstated in his post he must reimburse himself and therefore he would not recede from the demand Sally Mahmud had by his order made on us and that he would not suffer our business to go on till we complyed and accordingly the head Ruffagurs, Nurdeas, Washermen Coon-

[1] I cannot trace him. If he was buried in Dacca cemetery the slab on his tomb-stone has disappeared.

deegurs [1] etc were taken up and whip'd and putt in irons for haveing presumed to work for us after they had signed Mutchalkaes not to do so and the Delolls and Picars were obliged to sign fresh obligations not to come near our Factory nor do any business with us without his leave : in short, all our business was entirely stop'd. This our Vacqueel complained of to the Nabob as a great injustice and demanded him to do us justice, which he said he would do, but as yett we have been able to obtain no relief. Nor we are likely to have any for some time haveing recd. news that a purwanna is arrived from Muxdavad ordering the Nabob Gullub bullub to quitt his government and return thither and it is said that Sciadradge caun is to be our Nabob and Serasdee Mahmud his deputy.

Yesterday Serasdee Mahmud sent for our Vacqueel and told him that in consideration of his regard for the English he will consent to clear our business provided we pay down in hand 3000 Rs for the arrears and give an obligation to pay 2000 Rs yearly to the Mulbuscoss and Tantcouna, the first payment of 2000 Rs to be made on the 1st of February and declared he would not recede from this nor shall our business go on till we comply.

We being now met to take into consideration the unhappy situation of our affairs. These demands appear to us so exorbitant and Tyrannicall that we dare not venture to comply with them especially as our Nabob is recalled almost all the officers of the Government will be new and if we comply with this extravagant demand of Serasdee Mahmud, the new Nabob and all the new officers of the Government will expect their usuall presents to be enhanced in like proportion which will make the charges Durbar amount to an extravagant sum not to be borne either by ye Company's trade or the private trade. Moreover, as we have been impeeded this whole month our business is thrown greatly back and what cloth we have wants a great deal of work to be done to it and we seeing no likelihood of Serasdee Mahmud falling in his demands very shortly we believe it will be impossible to gett the cloth ready in time enough for our Honble Masters ships which we imagine to be now near their Dispatches. We therefore think it for our Honble Masters Interest and to prevent as much as possible such impositions in future to make a stand. Agreed therefore that we send Serasdee Mahmud word that we have fully resolved not to pay him one Rupee Account his pretended claim of arrears and also a letter in nature of a protest for all damages the Honble Company may

[1] "Workman who beetle cloth. Muslins are beaten with small chank shells (*voluta gravis*) and cloths of a stout texture with a mallet upon a block of tamarind wood, rice water being sprinkled over them during the operation." Taylor: Cotton Manufacture of Dacca.

A Coondegur is practically a calenderer.

sustain by his thus unjustly impeeding and stopping our business: that we send an Auredgedass to the Nabob Gullub bullub Caun and another to Sciadradge Caun setting forth the case in the most aggrevateing terms and demanding justice against Serasdee Mahmud, that the Chief send a letter to Jestmut rae Duan desireing his friendship and assistance in our behalf and that the Vacqueel and our late Broker's nephew Monichund do carry these Auredgedasses and letters and that they attend the Durbar daily to demand justice in the most clamorous and importuning manner they possibly can.

January 1738. Corporal Jacob Mercier died of a Flux the 31st ult.

6*th January* 1738. This morning we had the pleasure to be informed that Seerasdee Mahmud had cleared all our business and promised not to molest us till we had dispatched the remainder of this years Investment.

27*th January*. Chuckoo Seal, Mr. Cookes Banian, having been kept in confinement in the Factory ever since Mr. Russell arrived[1] here in hopes of fixing some Frauds on him and in order to give us light into Mr. Cooke's private concerns here and at the adjacent aurungs we have frequently endeavoured by examining him to find out any frauds he may have committed but his papers and books of accounts having been conveyed out of the way and he not confessing anything our endeavours have all proved fruitless and he being of no further use for the gathering in of Mr. Cooke's effects but the keeping of him here being an expence of Peons to guard him and we being frequently troubled with complaints at the Durbar. Agreed we write to the Honble the Board of Fort William to desire their orders for sending him to Calcutta to them.

January 1738 The cash account for this month includes:—

By charges Durbar: Eade Sallamy[2] to the Nabob Gullub bullub Caun and Durbar officers	271-0-0	
By ditto given Gullub bullub Caun at his going away in sundry spices	72-4-0	
By charges Durbar, Sallamy[3] to new Nabob Sciad radge Caun[4]	36-8-0	

22*nd February*. Our Vacqueel being returned from the Durbar informed us that the Nabob Sciadradgee Caun had

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[1] November 1736, so that he had been more than 14 months in confinement.

[2] Salami (offering) on the occasion of the Id.

[3] Offering, i.e. of welcome.

[4] It is evident that the change of Nawabs took place this month.

expressed great displeasure at the chief not having visited him that he said he would let us know we should pay him the same respect as his predecessors had recd. from us and that unless he was immediately visited by us and gave him the presents usual on such occasions he should stop all our business * * * * Agreed we send him word that it is contrary to the Honble Company's order that two visits should be paid and the expence thereof incurred twice in one year and as the Chief visited Gullub bullub Caun in April last we hope he will stay till next May when the chief will certainly visit him as usual : and this we agreed to because Sciadradgee Caun is not yet confirmed from Muxadavad, it is possible he may be recalled and a new Nabob appointed who will also insist on a visit.

26*th February*. Yesterday came advices that the Pinnace we dispatched with 3 chests of Treasure to Jugdea the 22nd inst was stop'd by order of the Nabob at a place called Rhumebeage Surray[1] the Chief sent the Vacqueel to the Durbar to know the reason thereof and to desire an order for her being cleared immediately, the Vacqueel informs us that he went to the Durbar and complained to the Nabob who gave him for answer that till he was visited by the Chief and the same presents given him as Gullub bullub Caun recd. last year he would not clear the Pinnace nor let us do any business.

This morning the Chief received a visit from Serasdee Mohmud acquainting him that he had received orders from the Nabob to forbid the Delolls, Picars, Ruffogurs and washermen to do any business for us. Agreed the Chief do send an auredgedass to the Nabob demanding justice and a currency of our business.

2nd March. The Duan Jesmut rae insisting on a present to be made him as usuall yearly and it laying in his power to serve or disserve us greatly Agreed he be paid five hundred (500) Rupees which is the least he will take to promote and help forward our business for the ensuing season.

[*Complaint was made to Muxadavad about the stopping of the Pinnace and it was released in April.*]

9th March. Our Vacqueel also informs us that he has not been wanting to demand justice of the Nabob for us that Jesmut rae has both interceded in our behalf but to no purpose for on the contrary the Nabob publickly declares that he will impeede our business and do us all the prejudice he can till we comply with his demands. Our broker and Vacqueel have the Government peons on them and the other black banian servants are afraid of stirring out of the Factory there

[1] Not traced.

being peons laying in wait to seize and carry them prisoners to the Durbar * * * * * * *

Serasdee Mahmud also demands of us three thousand rupees for the currency of our business and says that he will not give perwannahs to the Delolls, Picars, Washermen, etc. till we pay him that sum.

Agreed to write to Cossimbazar.

20th March. The Durbar officers having heard that we have made a complaint to Muxadavad of the ill usage and impediments we meet with here has had a very good effect, for the peons are taken off from our broker and Vacqueel and Serasdee Mahmud yesterday sent for our broker and told him that he was very desirous of being our friend and that he would permit the Delalls Picars Washermen etc. to do business with and for us and give us a due currency of our business for the year provided we would agree to pay him one thousand rupees, half in hand and the other half some time hence when we should be convinced of his sincerity but that the Nabob still continuing very angry with us we must do our business as privately as possible.

Considering the season is so far advanced and it is high time to begin our work, Agreed that we acquiesce to his proposal.

19th April. Nawab Shuja Khan's [1] parwana :—

Mr. Braddyll the English Chief at Cossimbazar has complained to me that Seerasdee Mahmud and you (Sciadradgee Caun) have distressed and done injustice to the English at Dacca (the copy of which complaint I now send you) and as the English have complained of you so has many others: my son Suffrage Caun [2] has wrote you a great deal concerning these affairs but you have not regarded him and have not withheld from doing ill, therefore I write you expressly and order you to satisfy this and all the complaints against you: if you dont it will not be well for you for I will turn you out of your employ and you will suffer disgrace :

25th April. Information received that Mr. Thomas Joshua Moore [3] was appointed Chief vice Mr. G. Mandeville.

13h May. Mr. Moore takes charge. The posts at the Factory then were ; Chief Accountant. Export Warehouse keeper, Buxi and Import Warehouse keeper.

17th May. Information received that Mr. James Blackford [4] was appointed to be assistant.

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[1] He was the Nawab Nazim of Bengal, whose deputy governed Dacca.

[2] Sarfaraz Khan, then Naib Nazim of Dacca; he resided at Murshidabad.

[3] He married Mrs. Ann Cooke on 15th April 1723 and died on 29th September 1745 (see Wilson's Early Annals, Vol. III). He was Collector (Zemindar) of Calcutta in 1737 (see Wilson's Old Fort William).

[4] I can not find any trace of him except an entry in Long's elections showing that he was in Jugdea in 1748.

23*rd May* 1738. Mr. Moore advises that he has received a message from Seerasdee Mahmud informing him that unless he consents to the making the Nabob a visit positive orders will be given to him, Seerasdee Mahmud, to take away all our Ruffagurs, Washermen etc. He therefore advises us by all means to agree to this visit which we have seriously considered and find it indeed impossible to avoid as well in consideration that the present Nabob Sciadradgee Caun has not been visited by any chief since he has been in his Government as that Mr. Mandeville promised him he should be visited this month.

Accounts for May include Rs. 80/- *for two months salary to Mr. Holwell,*[1] *Surgeon.*

26*th June. Messers. Moore & Feake visited the Nawab: the charges included:—*

To Nawab Rs. 1015/- *To Nawab's servants Rs.* 150/- *Liquors to Durbar officers* 85/- *Pepper to Nawab* 130 - *Cloves to Nawab Rs.* 122/8.

July. The accounts for his month show an expenditure on pepper, cloves and broad cloth for "Rajabullub Duan."[2]

September. Last night about 12 o'clock we recd. a letter from the Honble Presdt & Council at Calcutta communicating the Honble Company's orders for Mr. John Freame to be Chief of this Factory. Agreeable to these orders Mr. Moore has this morning delivered over the cash * * * * Books of the Factory, Merchant's contracts and every thing in his charge to Mr. John Freame and as he had done this he acquainted us that he could not accept of any new charge as second or otherwise but would set out for Calcutta tomorrow and that he should do himself the honour to address the Honble the President and Council separately on this occasion.

October. The accounts for this month include the following salaries:—

John Freame Sr. Merchant	for 6	months	160 -
Thos Feake, Factor	do.	do.	60/-
Bernard Bouket	do.	do.	60/-
Jas. Blackford. Writer	do.	do.	20/-
John Canty[3] Surgeon	for 3	months	120 -

[1] In a despatch to the Court of Director dated 13th January 1749 we read "In obedience to your commands of March 1742 we appointed Mr. John Zephaniah Holwell, one of your Surgeons in this Establishment, in the room of Dr. William Lindsay, who departed this life of a fever on the 29th of that month." (See Long) Holwell was evidently a surgeon on the establishment before the year 1742 and the man named in the diary was probably the same. If so, the famous historian was once in Dacca.

[2] See Introduction to this Part.

[3] Not traced.

November. Gave Rajabullub Duan[1] a silver snuff box double gilt 60/-

13*th January* 1739.—The Nabob has for some time been very urgent to have a visit made him and having peremptorily declared that he will put off no longer and will entirely stop our business unless we immediately consent to it, we think attempting to evade it must tend greatly to our Honble Masters' prejudice as it will prevent our sending hence the remainder of the investment which we are of opinion will be much more to their disadvantage than the expense of a visit and have therefore resolved upon making it in 2 or 3 days.

February. Accounts show Rs. 17 - *paid to Abdul Futtoo*[2] *Caun, Naib Sutah, and his servants.*

April. Account include "sallamy to the new Nabob,[3] a gold mohur 14/- and Rupees *and also Rs* 5 -" *given to Golab Roy*[4] *the Duan.*

23*rd May.* The 17th instant received a letter from the Honble the President and Council dated the 9th in answer to our of the 23rd ult. wherein they say that as affairs at Dilly[5] are still fluctuating and no settlement in the Empire yet made (at least that they have any certain account of) it is highly probable that there may be another change shortly of our Suba[6] especially on a revolution, in which case the Honble Company may be put to a double expence, therefore would have us defer making a visit so long as we possibly can with safety to their affairs but when we shall find the making a visit absolutely necessary for preventing worse consequence by obstruction in their business, then they permit us to do it on the cheapest Terms we can.

Having duly considered the purport of the above letter we think visiting the Nabob impossible to be avoided without hazarding an entire stoppage of our business till a change in the Subahship, etc. etc.

June. Visit paid on 20*th—on which occasion the Nawab was presented with Rs.* 1131/4/- *in cash and spices etc to the value of Rs.* 669/4/-

20*th July.* The Honble Company's business has now been stopt by the Durbar for some days and we find our utmost

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[1] Raj ballabh evidently only officiated as Diwan, pending the arrival of Golab Roy.

[2] Abdul Fath Khan (see Introduction). I can not trace him unless he be the same as Abdull Futtua who was appointed Diwan of Patna in 1721 (see Wilson's Early Annals, Vol. III).

[3] Evidently Abdul Fath Khan.

[4] This may have been the son of Diwan Bhupat Rai, who was found unfit for his father's post—probably on account of his youth in the time of Murshid Kuli Khan (see Riaz, p. 262).

[5] This refers to the arrival of Nadir Shah in Delhi (see Stewart).

[6] Refers to the Nawab Nazim of Bengal.

endeavours to obtain a clearance of no effect. considering that we have given no manner of provocation for any such proceedings and that there is no possibility of getting any redress here without submitting to terms directly contrary to our Honble Masters Interest Agreed therefore that we request the Honble President etc Council to direct the gentlemen at Cassimbazar to apply to their Durbar for a Perwannah for the currency of our business.

1*st September* 1740. The 27th ulto. arrived here William Bucknall Esq. with a letter from the Honble the President & Council to Messers Feake and Boukett dated 11th inst. importing that they had appointed him to succeed the deceased Mr. Freame.[1]

Our affairs with the Government still continue on the same bad terms as has been represented by Messers Feake and Boukett and as we have but little hopes of a change therein but from the present Nabob's leaving this place which it is expected he will do in a few days agreed that we defer coming to any Resolution for a few days.

6*th September*. The Nabob having this morning left the place without giving the order for the clearance of our business and we believing that his Naib will not dare to dispute any orders from Muxadavad in our favour though he himself did. Agreed that we write to the gentlemen of Cossimbazar.

22*nd September*. The 19th received a letter from the Govr. & Council dated the 12th inst in answer to our of 6th inst the most material part of which is that they would have us get a clearance of our Business by a proper Application to the Nabob but not to exceed the usual present in a public way: though a small matter in private they shall esteem well spent, as our Nabob is a very hot rash young man.

2*nd January* 1741. Having received certain advice that Hossein Cooly Caun[2] is coming here Nabob and expecting that he will on his arrival demand a visit and stop our business till we comply. we are of opinion that if there is no probability of a change being soon in the Government that it will be absolutely for the Company's advantage to agree to it without any delay.

29*th January*. Notwithstanding we have desired the Nabob to appoint a day for the visit and have made him

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[1] Mr. Freame's tomb is not to be found now in Dacca.

[2] On Ali Verdi Khan becoming Nawab Nazim of Bengal in 1740 he appointed his nephew and son-in-law, Nawazish Khan, to be Naib Nazim of Dacca. The latter preferring to live in Murshidabad put in Hossain Kuli Khan as his deputy. This man acquired great favour with and influence through Ghasita Begum, wife of Nawazish. but was assassinated in Murshidabad at the same time as Hosainuddin Khan was assassinated in Dacca.

several considerable presents, he has thought proper to stop our business and though we have sent Vacqueel to him several times to know the reason of it he will not so much as give him an answer.

1*st March*. Our business still continues stopt.

11*th March*. The Nabob having this morning cleared our business etc.

1*st September* 1741. The 25th ultimo Mr. Gumley[1] arrived here with letters * * * * ordering him to be Chief of the Factory.

12*th September*. *The Nabob demands a visit.*

17*th October*. *The Nawab demands a present in all respects the same as given last year.*

February 1742. *Mr. Feake appointed Chief of Jugdea.*

28*th April*. The state of affairs at present seem to threaten great troubles all over this Government by the Morrattaes,[2] it being confidently reported that they have taken Muxadavad and this place seems to be in great confusion by the number of people who resort here daily from Muxadavad with their families and effects which makes them apprehend that a party of Morrattoes will come here to plunder, we have upon this occasion thought it necessary to take into our service an additional number of 50 gun men and lay in provisions for the whole garrison.

Mr. John Smith[3] *joined as Third of the Factory.*

2*nd May* 1743. This morning Mr. Moore delivered us a letter from the Honble the Prest. & Council of Calcutta wherein they are pleased to order the charge of this Factory to be delivered over to him.

May. Provisions[4] laden by order of Thos Jos Moore, Esq Chief & Council at Dacca on account of the Troubles:

Oil—35 Mds. ..	..	..	168- 7-0
Gue—10 Mds. ..	..	..	85
Pease—15 Mds.	..	..	9- 3-3
Gram—73-15 Mds.	..	..	83-14-0
Doll—20 Mds. ..	..	..	20
Coarse gram—38 Mds.	..	..	16- 3-3
Water jars ..	..	..	104-15-3
Fine Rice—443-15 Mds.	= 394-1-9	..	546-13-3
Ordinary— ,, ,,	= 152-11-6		
			1034- 8-0

[1] Not traced.

[2] See Introduction to this Part.

[3] Not traced.

[4] We find it recorded elsewhere: "a fire happened on 17th (i.e. April 1744) which consumed the stores and provisions laid in an account of the Marrataes" (Consultations I/17.)

23*rd June* 1743. Mr. Bernard Bonkett[1] dying last night etc.

August. Samuel Rooper[2] joined as 3rd of Council.

15*th August.* Yesterday Adolph Johnson a Private man[3] departed his life.

25*th August* 1743. As the waters are now so far up as boats can go near Toezgong[4] and as the Honble the President and Council at Calcutta have directed godowns to be built there for security of the Honble Company's cloth from fire, Agreed that the Buxey take this opportunity of sending bricks Chunam etc.

March 1744. *Mr. Edward Bourchier*[5] *joined as Assistant.*

Acctt. Salary due to the Honble Company's servants for six months from 25th September ultimo viz :

Thomas Jos. Moore Esq.	@	40	p	annum	160
Mr. John Smith, Jr. Merct	@	30	p	,,	120
Mr. Samuel Roper Factor	@	15	p	,,	60
Mr. Jas. Blackford	@	15	p	,,	60
Mr. Edw. Bourchier, Writer	@	5	p	,,	20
Mr. Thomas Man[6]	@	5	p	,,	20
Mr. John Canty Surgeon	@	40	p.m.		240

——Account of the trade[7] of the Dacca Factory and the Chgs. to which the said trade pays consulage from 30th April ult.

Trade :

The Honble Company ..	.. 507791- 3-0
Thos. Jos. Moore Esq. ..	.. 101515- 0-3
Mr. John Smith ..	.. 10015-13-0
Mr. Sam Rooper ..	.. 16157- 7-3
Mr. Jas Blackford ..	.. 66116- 8-0
Mr. Thos. Man ..	.. 13017-12-3
	774613 11-9

Charges to which the above trade pays consulage :

Charges general..	.. 2866- 0-9
Servants wages ..	.. 1440- 0-0
Charges Durbar..	.. 17180-15-9
	21486- 0-6

[1] There is no trace of his grave in Dacca.

[2] I do not find him mentioned elsewhere.

[3] This means a private soldier.

[4] This must be by the Beel north of the end of Mug Bazar Road.

[5] Richard Bourchier was Export Warehouse keeper in Calcutta in 1730. He may have been father or brother of Edward. (See Wilson's Old Fort William).

[6] Not traced.

[7] In June 1744 we find it recorded that the Council at Dacca were urging the difficulty in getting mulmuls on account of the demand by Patans, Moguls and Armenians. (Consultations I/17).

Proportions :

The Hon Company	..	.. 15749-14-0
Thos Jos. Moore Esq.	..	.. 2815-15-9
Mr. John Smith	..	.. 277-13-0
Mr. Sam Rooper	..	.. 448- 3-3
Mr. Jas Blackford	..	.. 1834- 0-9
Mr. Thos Man	..	.. 361- 1-9
		21486-0-6

12*th July* 1744. Last night about 10 o'clock a number of Buxeries[1] belonging to the Government surrounded our Factory without our having the least dispute with them or any previous knowledge of this design to beset us we immediately sent a Vacuqeel to enquire into the reason of this treatment who returned about 2 this morning and told us ye Durbar had no other reason for what they had done than orders they last night received from Muxadavad to put peons on our Factory and an entire stop to the business through the whole Government of Mahmd Jung.[2] This morning early we sent our Vacqueel again to the Durbar who returned with the same answer but brot a perwanna to the head officer of ye peons not to molest any of us as we went and came to the Factory nor prevent any provisions etc., coming to us but to suffer nothing to go out. They likewise gave us a Perwanna that what cloth of ours was at Taezgong wet should be dryed and permitted to be brought to the Factory.

3rd August. Yesterday morning we received a lre. from ye honble the President & Council of Calcutta d/ ye 26th July acknowledging the receipt of ours dated the 12th advising our business was stopt. They are pleased to inform us the like has been done at Cassimbazar, Maulda and other places on acct. of a very extraordinary demand made by the Nabob on them which they were treating about but were then uncertain what the success would be. They permit us as ye stoppage of our business is of the utmost ill consequence to try if by any means we can prevail with our Government to permit us to proceed in washing and dressing our cloth tho' it should be attended with an expence which would be a great piece of service to our Honble Masters and money well laid out.

On the receipt of this letter we sent our Vackeel to try what could be done but recd. for answer that the Durbar officers here had done nothing in this affair but what was directly ordered from Muxadavad, so without permission from thence they could not consent to any such request.

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[1] Baksaris, i.e. men from Buxar—a kind of peon, Watchman or Policeman.

[2] Ali Verdi Khan.

30*th September*. The 25th inst. recd. a lre. from Jno Foster Esq Chief & Council at Cassimbazar enclosing Nawagis Mahmud Caun's [1] Perwanna to our Nabob for the clearance of our business, which we sent to the Durbar that day but our Vacqueels could not have admittance till the 27th when they were told our Nabob expected a present before he complied therewith, this we used our endeavour to prevent but found it impossible to avoid complying therewith without running the greatest hazard of entirely oversetting our investment, therefore agreed to pay to him and his officers viz.

	Sicca Rs.
To Nawagis Mahmud Caun	2000
Hossein Cooly Caun	1000
Duan Bunderabund [2]	1000
Hadjee Hosain	410
The Durbar officers	360

4th December. This morning recd. a genl. lre, from the Honble the President and Council of Calcutta dated the 28th Novr. in answer to ours of the 21st and 22nd. They observe the importunity of our new Nabob [3] in regard to paying him the usual visit. They have taken this affair into consideration and should be glad to have it deferred for a time but if it can not be done without great detriment to ye Company's investment they permit us to visit on the best and easiest terms we can.

12*th December* 1744. Having recd. advice from Serjeant Peter Cooper under whose care we had sent to Mr. Bellamy at Jugdea the 7th inst. Thirty three thousand Arcot Rupees that there was a great number of Muggs [4] in the way he was obliged to pass which he thought too hazardous to attempt with the party he had with him. Agreed we dispatch to him all the European soldiers we have at the Factory and twenty Buxerries with orders to make ye best of his way to Jugdea on the arrival of the party we now send him unless he has certain advices that the number of Muggs is so great as to render it impracticable for him to pass.

---

[1] He was the Naib Nazim of Dacca but lived in Murshidabad. Hossain Kuli Khan was his Deputy at Dacca. Nawazish was the husband of Ghasita Bibi daughter of Ali Verdi Khan.

[2] Brindaban—not traced.

[3] Does this mean that Hossainuddin Khan had already come as Deputy of Hossain Kuli Kahn.

[4] The Mugh pirates gave great trouble at this time. Cf. entry in Longs Selections especially the extract of a letter from Jugdea of November 16th 1752: "That as the time of the Mugs draws nigh they request us to order the Pinnace to be with them by the end of next month for the safe conveyance of their cloth and a chest of good powder with a lanthorn or two".

9th March 1745. This day arrived Mr. Nicholas Clerembault[1] * * * and took his seat as youngest of Council.

April 1745. *Mr. Thos Feake replaced Mr. Moore as Chief.*

2nd July 1745. Having advice that one Brass Peter[2] a Portuguese had settled several Factorys (as he terms them) and had hoisted the English colours without any authority given him for so doing and stopt not only country boats passing by but likewise a boat belonging to this Factory and apprehending that by these proceedings of his the Honble Company's affairs at this place may shortly be embroiled the Governor having no notice of them. Agreed that we send to bring the aforesaid Brass Peter to us in order to send him to the President & Council to answer for these transactions of his.

27th July. Durbar very pressing for a visit.

September 1745. A list of Banyans, Gomastahs &c in the Honble Company's service at Dacca viz :

Monnick Chund	Overseer & head sorter p.m. ..	100
Moneseram	do ..	20
Guzzy bulhlah	do ..	20
	Accomplants.	
Bullub toary	.. .. ..	17
Dumoo ..	.. .. ..	15
	Writers.	
Gurribax ..	.. .. ..	10
Goojarmull ..	.. .. ..	10

30*th December* 1745. The Government here being in very great consternation on arrival of some advices concerning the Murratoes and the Chief now laying before us the copy of a letter to our Nabob from Hossein Cooly Caun at Muxadavad[3] had been sent to him last night by the duan of this place wherein our Nabob is advised of the Morratoes having entered Muxadavad and making two several attacks even on the Kelleh itself which however they had not been able to enter at the despatch of that letter tho' they had burnt and destroyed everything round about that city and it being strongly reported here that a body of the Murrataoes under the command of Aga Sephy[4] have crossed the great river and are come as far as Bugwan Gola on their way hither and having great reason from the confusion our Durbar is in at present and the preparations our Nabob is

---

[1] He became chief of Dacca later and died there in 1755. His tombstone is still to be seen in Dacca Cemetery.

[2] Untraced.

[3] This makes it clear that Hossainuddin was now Nawab at Dacca.

[4] Mir Habib's brother is called Mir Serif in the Sair-ul-Mutaqarin. Aga Sherafe undoubtedly refers to him and so probably Aga Sephy.

making to apprehend this city will shortly be involved in troubles. Agreed we acquaint tne Honble President and Council of the same and desire them to send us an ensign with a strong re-inforcement of men that we may be able to secure our Honble Masters effects at this Factory and as the prices of provisions are already rising a proper stock to be laid in for the use of this garrison in case of any troubles happening here and apprehending that our Peons will not be so serviceable to us in these times as Buxerrys,[1] Agreed we dismiss what peons we have in our service and entertain Buxerrys in their Room, etc. etc.

3*rd January* 1746. It being the general report here that Aga Sherafi[1] Mir Habib's brother is coming with a party of Marattoes to plunder this city and our Factory being badly secured in several places . . . . . Agreed that a parapet wall in form of battlements be run round the same.

18*th February*. Agreed we send in our effects as soon as possible and to be ourselves in readiness to retire thither (*i.e. to the factory*) upon the least notice of the near approach of the Marattos.[2]

Military at Dacca.

	Decr. 1745	March 1746
Lieutenant	1	1
Ensign	0	1
Serjeants	5	7
Corporels	6	8
Drummers	5	4
European Private men[3] ..	47	71
Portugueze	4	42
Quarter Gunners	1	4
Armourer	1	3
Lascars	0	4
Sickly gurs[4]	3	7
Herry[5]	1	1

14*th April* 1746. As we apprehend we need no longer be affraid of the Morattoes coming this way. Agreed we dismiss the Portugueze entertained in our service on that account as soon as this month is out.

27*th April* 1747.

Mr. Feake is still Chief.
Mr. Smith died.

---

[1] Mir Habib's brother is called Mir Serif in the Sair-ul-Mutagari. Aga Sherafe undoubtedly refers to him and so probably Aga Sephy.

[2] From this it would appear that they lived outside the Factory, probably at Tezgaon.

[3] Private soldiers.

[4] Saiqal gar, i.e. cleaner of arms.

[5] A clan of Rajputs from Muradabad. (See Wilson's Glossary).

Mr. Clerembault is Second.
Mr. Paul Richard Pearkes joins as third.[1]

June 1747. *Edward Eyre joins as 4th.*[2]
12*th February* 1748. As we apprehend from the certain advices received from the Durbar that troubles will shortly arise in this city. Agreed we entertain till the troubles are over 10 Portuguese and 100 Buxerrys for the security of the Honble Company's Factory and effects.

25*th June* 1748. The Naib having offered the Honble Company a very great affront by ordering the Vacqueel to be driven from his presence in a shameful manner and forbidding their admittance into any of the Cutcherrys on account of our doctors refusing to visit the Nabob's blacksmith but desiring the fellow might be sent him.

Agreed that we send a complaint to Hossein Cooly Caun Nabob of this place at Muxadavad.

12*th September.* Enas Mahmud our Vacqueel who was sent with a complaint * * * * having returned with an order to give satisfaction for the affront offered the Company in the person of their Vacqueel by giving the Vacqueel a Seerpaw in the open durbar, the same was accordingly given the 4th inst with asurances that the like insult should never be offered for the future.

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[1] He was Buxi or Paymaster in Calcutta in 1754 and Export Warehouse keeper in 1755 during the Black Hole tragedy he remained at his post until the capture of the Fort and escaped in the confusion. He waived his seniority in favour of Holwell. (See Wilson's old Fort William).

[2] He was brother of a Dean of Wells and of Robert Eyre Chief of Patna. He perished in the Black Hole, Calcutta. (See Wilson's old Fort William).

11. The Automatic Control of the Separation of a Liquid into Fractions limited by Specified Densities.

By Horace Barratt Dunnicliff.

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The special application of the apparatus to be described to the work at the Cordite Factory, Aravankadu, S. India, is in the running off of the strong and weak waste acids from the dipping pans used in the displacement process for the manufacture of guncotton.

The acid, which is recoverable after the cotton is nitrated in the pans, is run off in two separate portions called strong waste acid (S.W.A.) and weak waste acid (W.W.A.). With the assistance of the appliance to be described, it is possible, without supervision, to run off the S.W.A., the W.W.A. and the unrecoverable residues into their proper receptacles, provided that it is known at what specific gravity (S.G.), the acid ceases to be S.W.A. and at what S.G. it is desired to stop the W.W.A. and to pass the rest of the runnings (unrecoverable) to waste down the drain.

The principle is a general one and capable of utilisation in connexion with other similar processes. It depends upon the fact that a body will sink in a liquid immediately its weight is ever so little greater than the S.G. of the liquid multiplied by the volume of the body.

Thus: suppose that a liquid of S.G. 1·3 is running from a vessel, A, Fig. 1, and that its S.G. is constantly falling. Suppose that it is desired to stop the flow of the liquid through the pipe, B, when the S.G. of the liquid has fallen to 1·2. A body, E, which can stop up the hole at C is constructed of S.G., 1·2. The body will float in the liquid until the S.G. of the liquid is 1·2 and immediately the S.G. falls

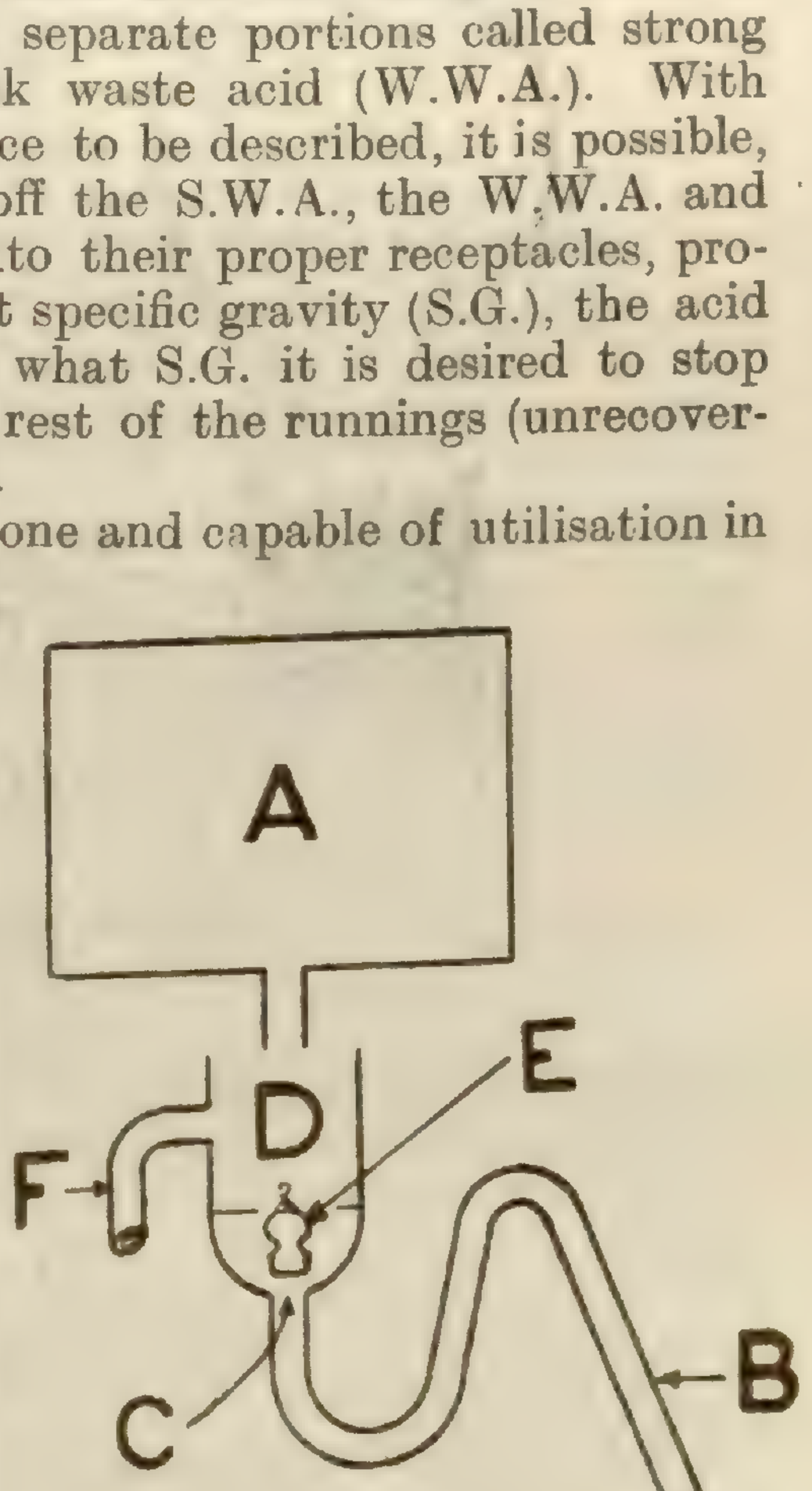

Fig. 1.

below that value, the body, E, will sink, block up the hole at C, and the liquid will cease to flow down the pipe B. If liquid continues to flow from A, the cup D, will fill up and the excess liquid will run over the sides or from a pipe such as F placed higher up on the wall of the cup.

In the particular case under consideration it was necessary to work with strong, corrosive acids, and the material of which the apparatus might be constructed was restricted. The floating body was made of glass. The models were made of lead, and it was early apparent that the floating body, hereafter

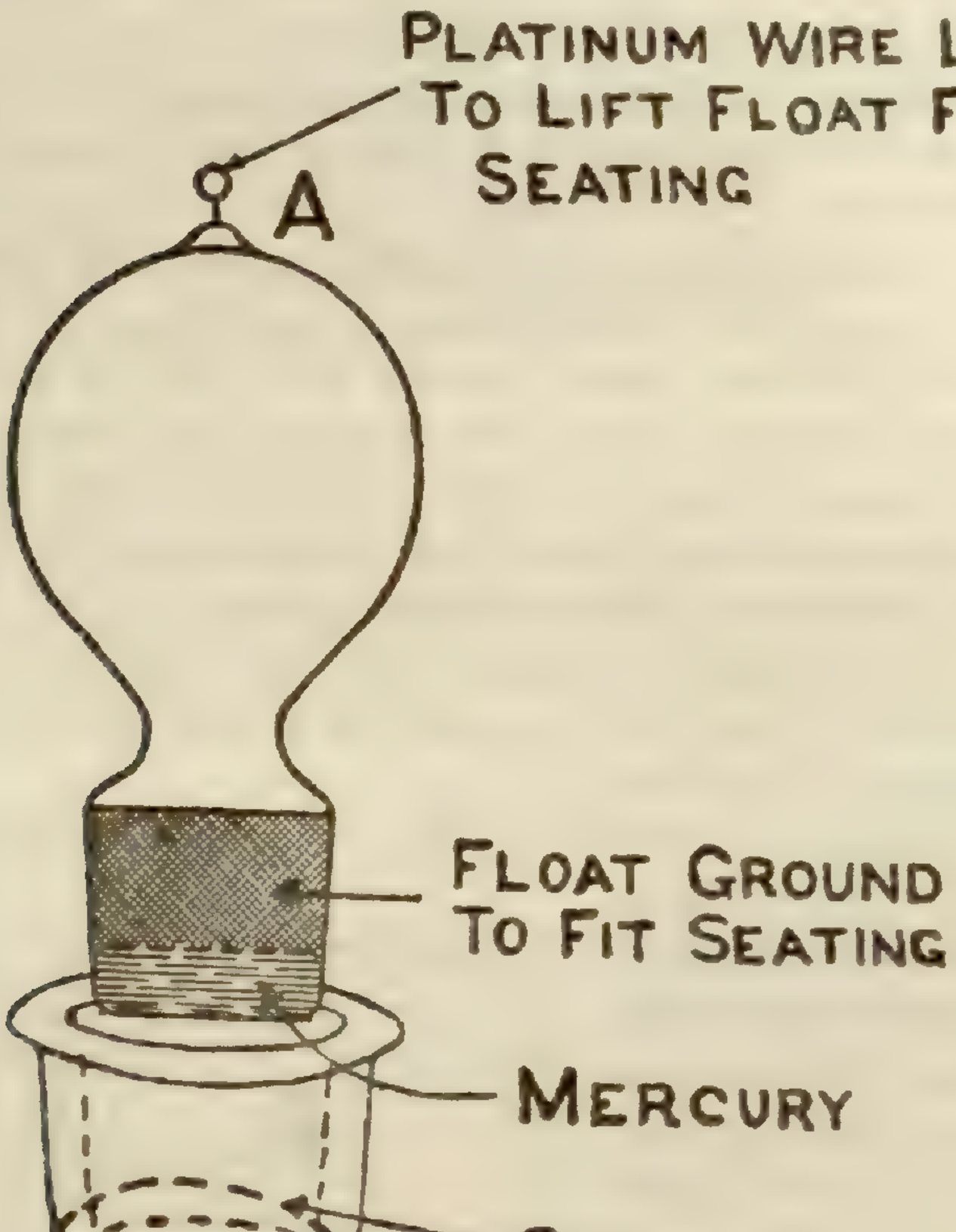

FIG. 2.

called the "float", must be of such a shape that it would fit exactly into the opening C, Fig. 1. The apparatus made of lead soon became corroded on the surface by the action of the acid and a seating for the float, originally liquid tight, very quickly became a bad fit (owing to the formation of lead sulphate) and allowed the liquid to slip past. For this reason, glass seatings were used to accommodate the ends of the glass floats. The float must be so constructed that it floats in the liquid in such a position that its shaped end will always find

accurately the seating provided for it. Glass floats of the desired S.G. were specially constructed by the author from old stoppers of the shape shown in Fig. 2. The shaded portion of the stopper and its seating were ground to fit exactly. The end A of the stopper was opened and, by calculation and weighing, sufficient mercury was introduced to make the weight of the stopper, plus the weight of the mercury introduced, equal to the volume of the float multiplied by the S.G. of the liquid it was desired to control. The end of the bulb, A, was then sealed off hermetically. If desired, a loop of platinum wire (which must be allowed for in the weighing) may be sealed in at A to facilitate the removal of

Apparatus, Automatic, Acid Control.

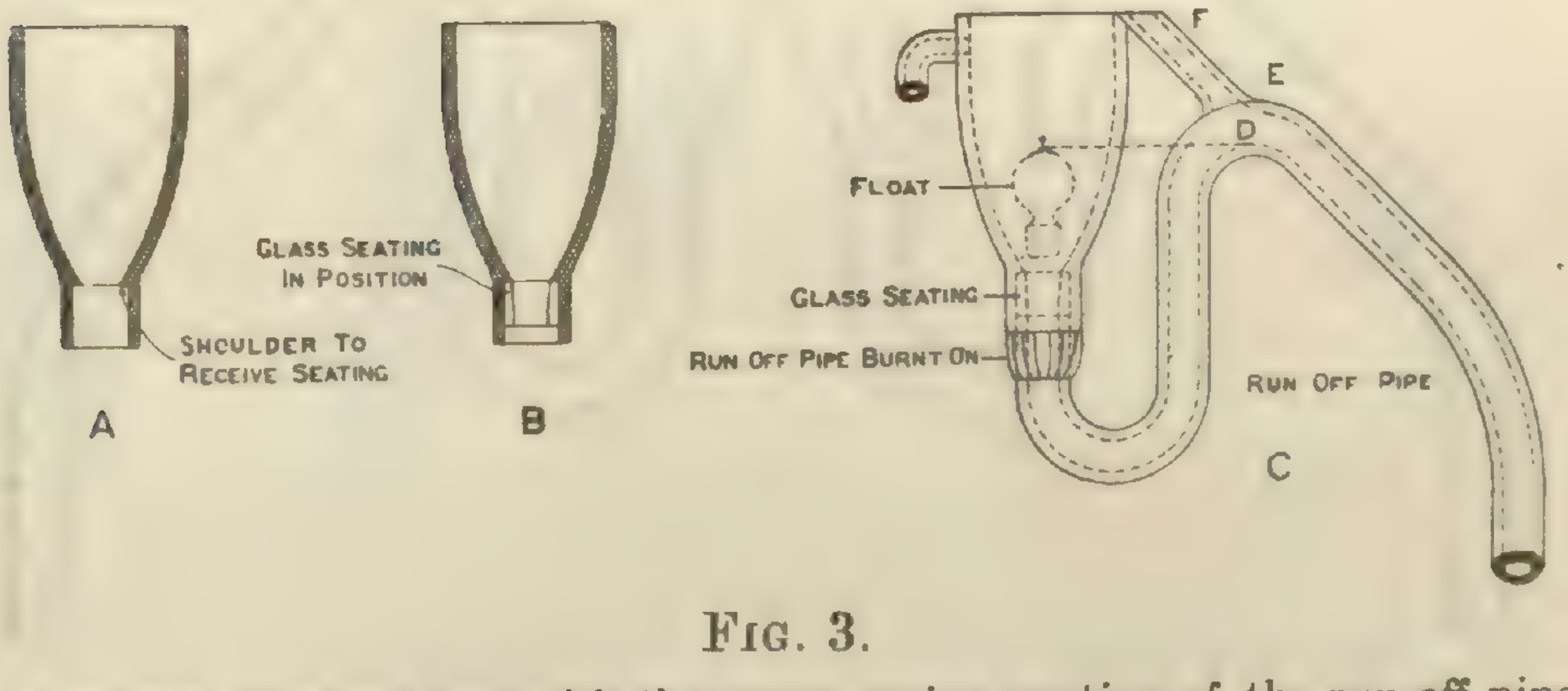

FIG. 3.

A shows the lead cup with the commencing portion of the run-off pipe shaped internally with a shoulder to receive the glass seating for the float.

B shows the same with the glass seating in position.

C shows the run-off pipe welded on with the float in the position it occupies just before it sinks into the seating.

the float by means of an hook. The float, being of this shape, always remains with the mercury in the base and with the bulb vertically upwards and, with the models constructed on this principle, the float has never failed to find and close its seating immediately. Floats of different patterns were constructed and tried but none was so successful as the design described above. The cup into which the liquid flows and which contains the float, should be so constructed that its walls taper towards the seating for the float in the manner shown in the diagrams of Fig. 3. The float, in sinking, will then always run straight into the seating, there being a slight suction owing to the flow of the liquid in addition to the directing action of the walls of the cup. The glass seating was fitted

without fracture into a lead structure in the manner illustrated in Fig. 3, the tube being made in two portions and then burnt together. If the whole apparatus were made of glass or pottery the seating would be ground directly in the taper-ing end of the cup C, in Fig. 1.

In order that the float should remain floating, it is essential that a certain amount of liquid should remain in the cup. This is provided for by bending the run-off pipe upwards so that the point D on the curve, Fig. 3 (C), is at a height sufficient to allow liquid to pass between float and seating when

FIG. 4 (DIAGRAMMATIC).

Figure 4 (diagrammatic). The first cup controls the run-off of strong waste acid, the second controls tho run-off of weak waste acid and the pipe D allows the unrecoverable residues to flow down the drain.

the float is just immersed, i.e., just as it is about to descend to its cut off position. In order that this tube may not act as a syphon (in which event the flow is intermittent and the float bobs up and down), an air hole is made in the top of the upper side of the run-off pipe and is fitted with a small tube which is attached to the top of the cup to give the apparatus additional strength. The diameter of the run-off pipe should be sufficiently large to permit the run-off of liquid coming from the supply at its maximum rate otherwise there is the chance that the rate of feed will be greater than the rate at which the liquid can get away and the excess liquid will flow over the

edges of the cup. As soon as the float sinks and blocks up the exit. the cup fills up and the float is pressed home by a slight head of liquid. The excess liquid flows across the passage provided, (Fig. 4, A) into a second cup provided with a cut-off control of lower S.G. and working on exactly the same principle as that first described. When the second float has descended, the excess liquid could be made to flow to another cup and so on in descending order of specific gravities. the principle being multiplied as much as desired for the process under investigation.

Completely successful experiments have been performed with this apparatus, one of which was in use for several months

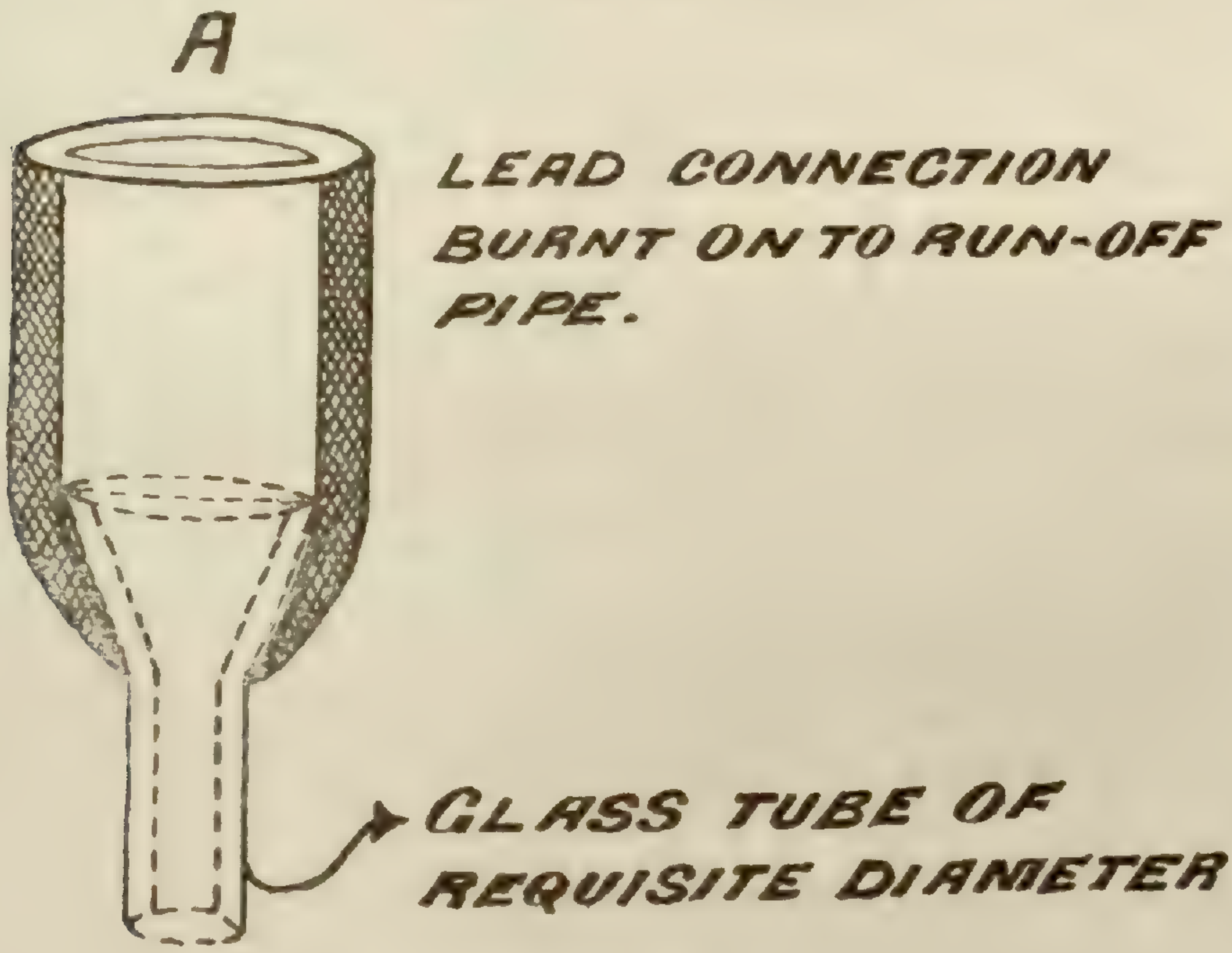

Fig. 5.

controlling the run-off of weak waste acid from one set of pans. According to present practice, weak waste acid is controlled at the lower limit by S.G. Except to demonstrate its efficiency, the appliance has not been used for S.W.A. as, at present, the amount of S.W.A. to be taken is controlled by instructions depending on a time factor received from the Chemist in charge of the Acid Section. For use with strong acids, the apparatus would be made most suitably of glass.

Its introduction into this Factory would obviate the necessity for the use of tall-boys and hydrometers. If, in present practice, the S.W.A. were not turned to weak at the proper time or the W.W.A. were not turned to the drain at

the proper S. G., the S.W.A. would be returned to the Acid Section weaker than is demanded and increased cost of recovery would result.

The application of the principle of this simple apparatus is general for all liquids, the run-off of which is controlled by S.G.

In *The Chemical Trade Journal and Chemical Engineer* of May the 3rd, 1919, Colin Sutton describes an apparatus for the control of the run-off of the waste acids from guncotton dipping pans. At Aravankadu, the exit pipes from the pans are made of lead. By trial, the diameter of this run-off pipe could be made of such a size that, when the cock is full open, the acid from one set of pans would get away in three hours. Owing to corrosion, the diameter of the tube would change, but, by fixing a glass tube of the requisite diameter in the end of the run-off pipe, the variation in the flow due to corrosion would be avoided. To obviate the risk of the glass tube dropping out, one end of it is slightly opened out and is then fixed into a short piece of lead pipe shaped to receive it. This lead pipe is then burnt on at A, Fig. 5, to the lead run-off pipe from the pan in the manner shown in Fig. 3.

The models were designed in collaboration with Mr. L. W. Pryor, Foreman of the Guncotton Section in this Factory. I wish to express my appreciation of the courtesy of Mr. J. C. Bain, Chief Foreman Plumber, and his staff who skilfully constructed models of the various forms of the apparatus for experiment and demonstration.

Cordite Factory,
Aravankadu,
S. India.

12. NUMISMATIC SUPPLEMENT No. XXXIV.

Note.—**The numeration of the articles below is continued from p. 90 of the "Journal and Proceedings" for 1920.**

210. Abūl Fazl's Inventory of Akbar's Mints.

There is not probably, in the entire range of the historical literature relating to the Indian Mughals, a passage which has been more frequently quoted or referred to by the students of their coins than the list of Akbarī mints in the *Āīn*.[1] The statement itself is neither lengthy nor complicated, nor is there anything extraordinarily difficult in its style or construction. And yet it can be hardly said that the author's meaning has been correctly apprehended. Some authorities have found fault with it in general terms, as 'imperfect' or 'inaccurate,' or 'incomplete.' Others have expressed their disappointment at the omission of this or that mint, of which coins of any year have been found, or their dissatisfaction on account of the inclusion of towns of which no issues are known.[2]

As a writer, Abūl Faẓl has his faults. His pompous platitudes, perpetual and, to us, fulsome adulation of his master and his habit of enveloping simple matters in a cloud of difficult or obscure words often excite our dislike and sometimes our disgust. But it has not been denied even by the most unfriendly critics, that he had exceptionally authentic and exact sources of information. There was not an important document or official record which was not open to his inspection, or which he could not have requisitioned at his pleasure. His appetite for knowledge of all kinds was prodigious. His avidity for 'dry facts and figures' literally knew no bounds. Nor was he a mere glutton or indiscriminate devourer of facts. Every page of the *Āīn* bears witness to his capacity of digesting and assimilating enormous masses of them, and his powers of analysis and the lucid presentation of his materials have ex-

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[1] Prinsep (Useful Tables, ed. 1834, p. 18), Thomas (Chronicles, ed. 1871, pp. 427-8) and Lane Poole (British Museum Catalogue, Introd., p. liii) have all transcribed the list with or without comment.

[2] Mr. Oliver complains that "Akbarābād, Mirath, Nārnol. Fathpūr, Sherpūr, Gobindpūr, Bairātah, Deogīr, Doganw and (? Sirsa Benares) are not mentioned by Abūl Faẓl in his list of Mints given in the *Āīn*." (J.A.S.B., 1886, p. 4.) See also I.M.C. III. Introd. xxxv (Bhakkar), xlvii. (Gobindpūr); P.M.C. Introd. lviii. (Bhakkar); Num. Sup. XI. 322 (Ḥiṣār Rupees of 966 A.H.); *Ibīd.* 324 (Gadraula Rupee of 967 A.H.) for similar remarks.

torted admiration even from those to whom "his style is intolerable."[1]

It may therefore be permissible to enter into a critical examination of this *locus classicus*, in order to remove existing errors of interpretation, elucidate the author's real meaning. and reassess its value as a numismatic document.

Let me begin by allowing Abūl Faẓl to speak in his own words :—

سر آغاز سلطنت بیهمال فراوان جا طلا بنام والا بلند پایگی میبافت امروز از چهار جا بر نگذرد معسکر اقبال بنگاله احمد اباد کابل نقوه و مس درآن چهار جای و در ده شهر دیگر عالي رتبگي یابد اله اباس اگره اجین سورت دهلي پٹنه کشمیر لاهور ملتان تانڈه و مس تنها در بیست و هشت معموره نقش پذیر آید اجمیر اوده اتک الور بداؤن بنارس بهکر بیهره پتن جونپور جالندهر هردوار حصار فیروزه کالپي گوالیار گورکهه پور کلانور لکهنو مندو ناگور سرهند سیالکوٹ سرونج سهارنپور سارنکپور سنبل قنوج رنتنبهور *

Āīn-i-Akbarī, *Bibl. Ind.* Text, I. 27, ll. 9-15.

This has been thus rendered by Blochmann.

"In the beginning of this reign, gold was coined to the glory of his Majesty in many parts of the empire ; now gold coins are struck at four places only, *viz.* at the seat of the government, in Bengal, Aḥmadābād (Gujrāt), and Kābul. Silver and copper are likewise coined in these four places, and besides in the following ten places.—Ilāhabās, Āgrah, Ujain, Sūrat, Dihlī. Patana, Kashmīr, Lahōr, Multān, Tāndah. In twenty-eight towns copper coins only are struck, *viz.* Aǰmir, Audh, Atak, Alwar, Badāon, Banāras, Bhakkar. Bahīrah, Patan, Jaunpūr.

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[1] "Abulfaẓl's high official position gave him access to any document he wished to consult, and his long career and training in various departments of the state, and his marvellous powers of expression fitted him eminently for the composition of a work like the Akbarnāmah and the Āīn. His love of truth and his correctness of information are apparent on every page of the book." Blochmann, *Āīn.* Trans. Pref. v-vi.

"It [the *Āīn*] will deservedly go down to posterity as a unique compilation of the systems of administration and control throughout the various departments of government in a great Empire, faithfully and minutely recorded in their smallest detail, with such an array of facts *** as the abundant material supplied from official sources could furnish." (Jarrett, *Āīn*, Trans. II. Preface, vii.)

"His one merit—and it is one which he specially claims for himself—is his laboriousness. *** His work has also the imperishable merit of being a record by a contemporary, and by one who had access to information at first hand." H. Beveridge, *Akbarnāma*, Trans. I. Preface.

Jālandhar, Hardwār, Hisār Firūzah, Kālpī, Gwāliār, Gorak'hpūr, Kalānwar, Lak'hnau, Mandū, Nāgor, Sarhind, Sīyālkōt, Sarōnj, Sahāranpūr. Sārangpūr, Sambal, Qanauj, Rantanbhūr."

It will be seen that Blochmann has punctuated this passage. It is common knowledge that there are no stops in Oriental writing. The real sense of the author is consequently liable to be altered, and an erroneous impression conveyed of its significance by careless or incorrect pointing in the translation. For my part, I cannot understand why a semicolon has been placed at 'empire,' and a full-stop at 'Kābul' and 'Tāndah.' It is at 'empire' that there is the first real pause in the sense,and a new sentence begins at 'Now,' which is continued, in fact, to the end.

Then, again, the phrase used for the first of the four gold-mints is rendered 'Seat of the government,' and has been naturally understood to denote either Āgra or Fatḥpūr (Thomas, Chronicles, 427; Lane Poole, B.M.C. Introd., p. liii; Oliver, J.A.S.B., 1886, p. 4). This is misleading. The original words are معسكر اقبال *lit.* 'Camping-ground of Good Fortune.' It seems to me that Abūl Faẓl is using an expression having exactly the same significance as اردوي ظفر قرين. *Urdū* is a word of Turkish origin, *Mu'askar* of Arabic. عسكر 'army,' is generally believed to be an arabicised form of the Persian لشكر, (Hobson-Jobson, ed. Crooke, pp. 507-8), and معسكر means 'Place of encampment, camp (Steingass, Persian-English Dictionary, *s.v.*). Persian writers are notoriously fond of employing periphrastic expressions and of ringing the changes on identical ideas in different verbal forms. Several other locutions having the same import, *e.g.*

اردوی همایون , اردوی ظفر طراز , اردوی گیهان پوی , اردوی گیهان نورد , اردوی معلّی , اردوی اعلی , اردوي ظفر مکان *

معسكر مخيّم اقبال , معسكر ظفر پناه , معسكر فيروزي , معسكر دولت معسكر والا , معسكر ظفر قرين , معسكر ظفر آشيان , معسكر همايون , موكب اقبال , موكب ظفر قرين *

are found in Sharfuddīn 'Alī Yazdī, Mīrkhwānd, Khwāndamīr, Badāonī, Niẓāmu-ddīn Aḥmad, Abūl Faẓl, Mu'atamad Khān, 'Abdul Ḥamīd Lāhorī and other historical writers.

With these other phrases we are not at present concerned, but it is incumbent upon any one who challenges the meaning assigned to an expression by an orientalist like Blochmann to give sufficient reasons for his contention. In such cases, an author is generally his own best commentator, and

I will therefore take at random some passages from the *Akbar-nāma* in which the phrase under discussion occurs. The Persian scholar will be able to judge for himself. Those unacquainted with that language will have the satisfaction of having the real sense, if not the literal meaning, in the words of Mr. Beveridge, a disinterested scholar who is indisputably the highest living authority on the Akbarī period.

I will first cite the following :

و حکم مقدّس شد که هیچ احدی در رکابِ نصرت قباب نباشد تا آنکه جلودار و امثال این مردم را که وحدت گاهِ خلوت از کثرتِ اقسام این مردم غبار آلود نمیگردد باز داشته یگانه و تنها بباطن با خدای خود به نیاز و بظاهر از مردم خشم آلود از معسکر اقبال بیرون آمدند *

Op. cit. II. 60, ll. 21-24.

"And [*scil.* the Emperor] issued an order that no one of his retinue should be in attendance on him. He [*scil.* Akbar] sent away his grooms and such-like persons, that the solitude of his retirement might not be contaminated by the crowd of this class of men, and went out unattended and alone from the *Camp of fortune*." Beveridge, Akbarnāma, Trans. II. 92.

The context shows that the order was issued during the return-journey from Mānkot to Lāhor, and the معسکر اقبال must have been somewhere between those two places (*ibid.* 91-94, *passim*). The synonymous expression اردوی ظفرقرین is used for it very soon afterwards (*ib.* 94 ; Text, 62, l. 1).

Again we read :

القصّه بعدِ فراغ از انبساطِ شکار اردوی معلّی را که در نواحیٔ الور نزولِ سعادت فرموده بود روانه ساختند و خود بدولت و اقبال از راهِ نارنول جولانِ اقبال فرموده بمعسکر اقبال پیوستند *

Bibl. Ind. Text, II. 329, ll. 15-16.

"In fine, after enjoying the hunting, H. M. sent off his Camp [اردوی معلی] which had been pitched near Alwar, while he himself went by way of Nārnol, and there joined the *Camp*. [معسکر اقبال]." Beveridge, II. 484.

Once more, we have the phrase in the following sentence :

اگرچه از شکوه رایاتِ جهانگشای در آن قلعه بودن بخود نتوانست

قرار داد اما از بادهٔ پنداری که در سر بیمغز خود دارد از هشت کروهی معسکر اقبال میگذرد که بناحیتی رفته سرِ بشورش بر آرد *

Text, III. 11, ll. 21-23.

"Though he could not maintain himself in that fort (*scil.* Broach) against the world-conquering standards, yet the wine of presumption in his brain was making him pass by at a distance of eight Kos from the *Camp of fortune* in order that he might cause a disturbance in the country."

Beveridge, III. 16.

The 'Camp of fortune' was at the time [A.H. 980] somewhere near Baroda, and the subject of the next chapter is "the rapid march of the Shāhinshāh against Ibrāhīm Ḥusain Mirzā, the battle and the defeat of the enemy" [at Ṣarnāl near Thāsrā], p. 17.

In the chronicle of the year 987 A.H., the account of the death of a man called Bhūpat Chohān is thus introduced:

آن شوریده مغز از تباه سرشتي نتوانست همراهي گزید از این آگهي فرمان شد که اقطاع دارانِ آن نواحي او را بدست آورند از بیمناکی در معسکر اقبال آمد و راجه تودرمل و راجه بیربر را پناه اندیشید *

Text, III. 279, ll. 4-6.

"That turbulent-brained one would not choose to accompany them and an order was given that the landholders there [i.e. of Etāwa] should arrest him, but out of terror he came to the *Camp of fortune*, and sought protection from Rāja Todar Mal and Rāja Bīrbar." Beveridge, III. 407.

The *émeute* is said to have taken place when "H.M. was in Thīrah" (or Bhera or Mathra), on the return-journey from Ajmer to Fatḥpūr by way of Mewāt.

One more passage only need be quoted *in extenso*:

بیست و چهارم ظاهر سهرند معسکر اقبال شد گیتي خداوند بباغ دلکشای آن مصرِ دولت عشرت اندوخت *

Text, III. 346, ll. 19-20.

"On the 24th [Isfandārmaz, XXV R-Y.] the army encamped at Sarhind, and H.M. rested in the delightful gardens of that city." Beveridge, III. 509.

The Emperor was at the time [989 A.H.] marching against his brother, Muḥammad Ḥakīm, who had invaded the Panjāb.

It will suffice to give references only to the other places in which the phrase occurs. They are Akbarnāma, Text. I. 45 (Trans. I. 135), I. 46 (Trans. I. 136), II. 56 (Trans.

II. 86), II. 199 (Trans. II. 310), II. 284 (Trans. II. 420), II. 318 (Trans. II. 469), III. 97 (Trans. III. 136), III. 243 (Trans. III. 348), III. 370 (Trans. III. 543).

The autobiography of the Emperor Jahāngīr is a much smaller work than the *Akbarnāma*, and still I have noted at least nine instances of the use of the expression in Sayyad Aḥmad Khān's edition of the *Tūzuk*. They arrest attention on pp. 207, 250, 317, 323, 355, 356, 359, 360, and 376. English readers will find the corresponding passages at I. 418, II. 48, 180, 191, 250, 252, 258, 259, and 287 of Mr. Rogers' version, and have little or no difficulty in discovering that it is always rendered by some such word or phrase as 'Camp', 'encamping place', 'Camp of the army of prosperity', 'abode of good fortune' or by some verbal clause having a similar signification. One of these passages I beg permission to quote, as the author himself leaves no room for doubt as to its meaning by employing اردوی ظفر قرین and معسکر اقبال as absolutely synonymous or interchangeable expressions.

بالجمله در حوالی دهلي سید بهوه بخاری و صدر خان و راجه کشندس از شهر آمده بسعادتِ رکاب بوس سر افراز شدند باقر خان فوجدارِ سرکارِ اوده نیز درین تاریخ خود را باردوی ظفر قرین رسانید بیست و پنجم ماهِ مذکور از معمورهٔ دهلي گذشته در کنارِ آبِ جمنه معسکر اقبال آراستم *

Text, 356, ll 12-15.

Mr. Rogers' translation runs as follows:

"In fine, when I was near Delhi, Sayyid Bahwa Bukhārī, Ṣadr K[hān] and Rāja Kishan Dās came out of the city, and had the good fortune to kiss my stirrup. Bāqir K[hān], faujdār of Oudh, also on this day came to the *victorious camp*. On the 25th of the month, passing by Delhi, I pitched my *camp* on the bank of the Jumna." II. 252.

The locution is not unknown to later writers and occurs thrice in the *Iqbālnāma-i-Jahāngīrī* of Mu'atamad Khān (Bibl. Ind. edition, 71, 170 and 203). The author of the *Bādishāhnāma* would appear to have been as fond of it as Abūl Faẓl himself, as will be seen from the following references to the pages on which it is found. Bibl. Ind. Text, I. i. 327, 411, 521, 527; I. ii. 9, 17, 20, 71, 73, 117, 121; II. 22, 111, 143, 190, 257, 320, and 413.

These instances suffice to show that the mint name at the head of the list does not stand for Āgra or Fatḥpūr but is to be understood in the same sense as اردوی ظفر قرین [1]. No issues of

[1] Āgra is ruled out, as it is separately mentioned below among the towns licensed to coin silver only and not gold. The glory of Fatḥpūr

the latter mint were known when Blochmann wrote, and this probably accounts for his failure to grasp the real meaning.

The Mughal Emperors were accompanied on their progresses and expeditions by all the Imperial *Kārkhānas* or Establishments, the Treasury for precious stones, the Farrāsh Khāna, the Ābdār Khāna, the Kitchen, Wardrobe, Library, Arsenal, Stables for elephants, horses, camels, cows, etc. (*Vide* Bernier's Travels, Ed. V. A. Smith (1914), pp. 258-9). The دار الضرب or Mint also was one of them. Its workmen and officials followed the Pādishāh wherever he went and had to be always in attendance.[1] 'This was the اردوی ظفر قرین or معسکر اقبال Mint,' and it appears to have been also called سرا ضرب حضور.

Abūl Faẓl writes: 'As regards gold coins, the custom followed in the *Imperial mint* is to coin *La'l-i-Jalālīs*, *Dhans* and *Mans*, each coin for the space of a month. The other gold coins are never stamped without special orders" Blochmann, *Aīn*, Trans. I. 30. Here the words in the original are سرا ضرب حضور *lit.* 'the Ḥuẓūr's [*i.e. Emperor's*] house for striking coins.' Text, I. 26, l. 8.

This material error corrected, let me give a literal rendering of the passage, making only such alterations or additions in Blochmann's wording as are absolutely necessary, and indicating them by italic type. The punctuation also has been set right, and the names of the towns about which there is no dispute omitted.

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had departed long since. Akbar quitted it finally in the thirtieth year of his reign (993 A H. 1585 A.C.) and returned to Āgra after thirteen years' absence only in 1599 A.C. He never lived at Fatḥpūr again except for a few days in May 1601 A C. (V. A. Smith, Akbar, 106-7 and 231). W. Finch describes it in 1610 as "all ruinate, lying like a waste desart, and very dangerous to passe through in the night, the buildings lying wast without inhabitants." Purchas, His Pilgrimes, MacLehose's Reprint (1905), IV. 42.

The dread of an Uzbeg invasion compelled the Emperor to take post near the frontier, and his headquarters were really at Lāhor during this period. But the *Mu'askar-i-Iqbāl* mint cannot apparently be identified with Lāhor as the name of the latter town occurs in the catalogue of *silver*-mints.

[1] Nizāmuddīn Aḥmad in his account of the campaign against Hājīpūr and Patna says, "The boats carried all his [*scil.* Akbar's] equipments and establishments [کارخانهای سلطنت], armour, drums, treasure, carpets, kitchen utensils, stud, etc." *Ṭabaqāt-i-Akbarī* in Elliot and Dowson, V. 374). There are elaborate accounts of all these *Kārkhānas*, قور خانه و نقار خانه و خزانه خانه و کرکراقخانه و فراشخانه و چیقه خانه و مطبخ و طوائل as Niẓāmuddīn calls them (Lakhnau Lithograph, 315, ll. 8-9), in the First Book of the *Āīn*, and the Mint comes in for treatment only because it was one of the *Kārkhānas* attached to the 'Imperial Household'—the subject of that Book. Vide Blochmann, *Āīn*, Trans. 16ff.

"In the beginning of this *incomparable* reign, gold was coined to the glory of his Majesty's *name* in many *places* of the empire. *At this time* [امروز], gold coins are *not* struck at *more than* four places; *the Camp* of *Good Fortune*, Bangāla, Aḥmadābād and Kābul; silver and copper are likewise *exalted by being* coined in these four places and besides [the following] ten places; [*Names*]; in twenty-eight towns, copper coins only are struck; [*Names*]."

It will perhaps appear strange but it is nevertheless true that the most important word in this passage is امروز *lit. this day, to-day, at this time*, or as Blochmann renders it '*now*.' There can be no doubt that this particle governs every one of the three members of the sentence of which it is the leading word, and not the clause relating to gold only, as Blochmann's pointing would lead one and has actually led many to suppose. *It applies to silver and to copper just as much as to gold*, and it was clearly the intention of the author to say that the statement (the whole and not any particular part of it) was true *only* of *the time at which he was writing*.

The question which then arises is, when was the passage written? To such an inquiry concerning a few lines in so voluminous a work it is obviously not easy to give an exact answer. There appear to be good reasons for contending that the list was *first drawn up* in the 40th year, but there are at least equally good grounds for holding that it was *revised* at some time *before the end* of the 42nd. The list is found at the 27th page of the text and in the very First Book of the *Āīn*. The first chapter of that Book is on the subject of the 'Imperial Household,' and we find there the following explicit statement. "Although many servants of the Household receive their salaries on the list of the army, there was paid for the household in the *thirty-ninth year of the Divine Era*, the sum of 309,186,795 dāms" (Blochmann, Trans. *Āīn*, I. 12). Now if Abūl Faẓl had before him, *when* he composed the very first chapter, the figures for the 39th year, and if he completed his prodigious task, as he himself afterwards tells us, in the 42nd year, it is fairly clear that he could not have indited the statement before us either many months before or many months after the commencement of the 40th year.

That year is expressly indicated in the account of the 'Divine Era' in the first chapter of the Third Book: "In this time-worn world of affliction, Divine Providence has vouchsafed its aid to many who have attained considerable renown in these constructions, such as Archimedes, Aristarchus and Hipparchus in Egypt, from whose time to *the present*, *the 40th year of the Divine Era*, 1,769 years have elapsed." (Jarrett. *Āīn*,

Trans. II. 3). Similarly, we are informed in other places, that 1,652 years of the Vikrama Era (*ib.* 15), 1,517 of the Shaka Era (p. 16), 1,002 of the Hijrī Era (p. 28) and 963 years by the Yazdajardī reckoning had *elapsed* at the time of writing (p. 28). Now the 40th year Ilāhī began on 9 Rajab, 1003 A.H. (*Akbar-nāma*, Text, III. 667) = 10th March 1595 A.C.' (Old Style). The first day of Vikrama 1653 was 23rd October 1595 A.C., of 1518 Shaka, 18th March 1596 A.C. and of 964 Yazdajardī, 19th October 1595 A.C. Old Style (S. Pillai, Indian Chronology, Cowasji Patell, Chronology). The basis of three other synchronisms occurring elsewhere in the same volume is again the 40th year. "Towards the close of the Dwāpar Yūg, 135 years before the beginning of the Kalī Yūg, and 4,831 years anterior to *this the* 40*th of the Divine Era*, this event [the War of the Mahābhārat] arose into fame, and was left to posterity as a record of portentous warning" (Jarrett, II. 283). We are also informed that an ascetic named Mahābāh flourished in Mālwa 2,355 years 5 months and 27 days "*prior to this the* 40*th year of the Divine Era*" (p. 214), and that the Rājā Ugnand (*sic*) of Kashmīr lived 4,044 years before "*this the* 40*th year of the Divine Era* (p. 381).

Once more we are expressly told, at the commencement of the invaluable statistical "Account of the Twelve Sūbahs" which occupies more than three-fourths of the second volume of Colonel Jarrett's translation, that "*in the* 40*th year of the Divine Era*, His Majesty's dominions consisted of one hundred and five sarkārs (divisions of a Sūbah) subdivided into two thousand seven hundred and thirty-seven townships." Jarrett, II. 115.

Lastly, we find the author thus lamenting the death of his brother in what may be truly called the Epilogue to his great prose-poem. "*Scarce half of the first book* [دفتر نخستین] had *been written*, when destiny worked its spell, and that free spirit in the fulness of its knowledge, took its last journey and afflicted my heart with an exceeding grief." (Jarrett, III. 412). That 'free spirit' was Abūl Faiz Faizī, 'the first writer of his age, the laureate among accomplished poets,' whose death is elsewhere recorded to have taken place on 21st Mihr, 40 R.Y. 10th Safar, 1004 A.H. (15th October 1595 A.C.). Akbarnāma. Text, III. 673, l. 4; Lowe, Badāonī, II. 420.

It will be seen that in every one of these ten passages the year of writing is invariably identified with the 40th year Ilāhī, and it would be open to any one to argue that the inventory must be supposed to have reference to *that year* and no other. But there is a statement in the *first* Book which must have been inserted in the 42nd. "Hitherto, the cost of these articles," Abū-l Faẓl writes, "had been uniformly computed and fixed by contract with the camel-drivers. But

when *in the* 42*nd year of the Divine Era* [1598 A.D.],[1] it was brought to the notice of His Majesty, that these people were, to a certain extent losers, this regulation was abolished." (Blochmánn, *Āīn*, Trans. I. 146). And in the Epilogue or Conclusion which I have just mentioned, the author informs us that after the death of his brother, he "methodised his materials anew" (Jarrett's Trans. III. 414). He afterwards speaks of renewing his task 'for the fourth time,' and of finally undertaking 'a fifth revision' and 'going over the work from the beginning' (*ibid.* 415). Lastly, he tells us that the entire work, i.e. the *Akbarnāma* of which the *Āīn* is the last or concluding section (*daftar*) was completed in the 42nd year. "Within the space of seven years, *** a compendious survey covering a period from Adam down to the sacred person of the prince regnant, has been concluded, and from the birth of His Imperial Majesty *to this day* [اکنون, Text, II. 256, l. 24] *which is the* 42*nd of the Divine Era*, and according to the lunar computation, 1006, the *occurrences of fifty-five years of that nursling of Grace* have been felicitously recorded, and my mind has been lightened in some degree of its stupendous burden." (*ibid.* 416.)[2]

It may be perhaps worth while pointing out that there are some indications in the list itself of revision or subsequent

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[1] The 42nd year began on 2nd Sha'abān 1005 A.H. (11th March, 1597) and ended on 12th Sha'abān 1006 A.H. (10th March, 1598 A.C. Old Style.

[2] It should be borne in mind that the *Āīn* is not a separate work but part and parcel of the *Akbarnāma*. "The Āīn-i-Akbarī," says Blochmann, "is the third volume of the Akbarnamah by Shaikh 'Abulfazl *** The first volume of this gigantic work contains the history of Timur's family -*** and the reigns of Bābar, the Sūr Kings, and Humāyūn, whilst the second volume is devoted to the detailed history of nearly forty-six years of the reign of the Great Emperor. The concluding volume, the Āīn-i-Akbarī, contains that information regarding Akbar's reign, which though not strictly historical, is yet essential to a correct understanding of the times." Trans. Preface, iii.

Abūl Fazl repeatedly refers to its contents as belonging to the last or final volume (آخرین دفتر) of the *Akbarnāma*. (Beveridge. Trans, II. 403; III 167, 414, 514, 685, 739, 807, 828; *Āīn*, Jarrett, III. 416). Badāoni also speaks in the same strain, Lowe, Trans. II. 388, 406.

The observations in the Epilogue anent the corrections and revisions have reference, therefore, to the *entire work* and not to the concluding portion or supplement which European writers specifically call the *Āīn*. Indeed, the statements about the trouble taken to secure reliable accounts of events, the attention bestowed on fixing the chronology of Akbar's reign in terms of the Ilāhi Era (Jarrett, III. 414), the explicit reference to the "occurrences of fifty-five years of that nursling of grace" and the "introduction of a few stanzas which should be in harmonious accord with the composition" (*ibīd.* 415) are more applicable to the historical portion of the work than the statistical—to what is now generally called the *Akbarnāma* than to the *Āīn*.

Akbar was born on Sunday, 5th Rajab, 949 A.H. [15th October, 1542 A.C.] He therefore completed fifty-five *Ilāhī* years in October 1597—Ṣafar, 1006 A.H.

addition. It will be observed that the first twenty names in the the catalogue of copper-mints are arranged in alphabetical order. Eight new names are then added, seven of which are again marshalled on the same principle and then, lastly *another* name is inserted *out of the proper order* as if to make up for some inadvertent omission. It may be also noticed that six of these eight names begin with a *Sīn*. It would seem as if they had been all missed or accidentally left out in the first draft.

Well then, if we are to understand by امروز (*at the present time*), the 42nd year Ilāhī, it follows that the list is not and was never intended to be anything like the exhaustive enumeration of the Akbarī mints, which it has been supposed by many of our authorities to be. The mints of an Antecedent or Earlier Period are expressly excluded, and we have no right whatever to expect any recognition of them. It is also self-evident that all those mints which could not, for historical reasons, have been in existence before the 42nd year must be ruled out.

But what do we mean by the Mints of the Antecedent or Earlier Period? Now, the outstanding feature in the Numismatic history of the reign is the introduction of the Ilāhī Era, and the consequent remodelling of the coinage after the 29th year. It seems to me that we have here a clear dividing line, a parting of the ways between the old period and the new, which is fairly well marked, a bifurcation easy to make as well as to discern. The writer was evidently thinking of the Numismatic revolution which had taken place in his day, which he himself had borne no small part in engineering, and to which he frequently refers with pride and exultation in his pages. He was taking into account only those mints—which were at work when he wrote, and deliberately excluding all those which had been closed since the Reorganization of the Coinage and the Imperial Mints about the 30th year.

Briefly, my point is that all the criticisms based on the supposition or expectation of finding in his pages a complete list of Akbar's mints are radically erroneous and unfair to the writer. The first thing we have to do before he is put upon his trial is to eliminate all the mints which, though open during the Antecedent or Early Period. can not be shown to have been at work during the (Middle) Period of which he was writing. Next, we must also draw a line at the 42nd year and shut out all those which were demonstrably established for the first time after that date.

I now submit a chronological synopsis of Akbarī Mints which has been prepared mainly with a view to making these two lines of demarcation clear. The places at which coins in any metal were struck during the Earlier Period (IR—XXIXR) only have been marked with a star, those which were opened at some time after the 42nd year with an obelus or dagger.

The names of those *ateliers* which were presumably open during what I have called the Middle Period have been italicised.

Akb. Mints.	Gold.	Silver.	Copper.
Atak Banāras ..	——	——	37–43 R; 48 R.
Ajmer ..	——	——	970 A.H.; 979–1005 A.H.
Ujain or Ūjain ..	——	968; 987-1001 A.H.; 37–43R(?); 42–46 R.	986–1000 A.H.
Ujainpūr ..	——	——	45 R.
Aḥmadabad ..	980–988 A.H.	980–1000 A.H.; 37–50 R.	980–995 A.H.; 38–50 R.
†Ahmadnagar ..	——	46 R.	——
*Udaypūr ..	984 A.H.	——	——
*Urdū ..	987 A.H.	Square, 987 A.H.	——
Urdū-Zafar qarīn	984 A.H.; Alf. (1000).	Alf. (1000); Undated.	Alf.; 35–50 R; Undated.
†Asīr	45 R.	——	——
*Akbarpūr ..	——	——	981, 982 (K), 984 A.H.
*Akbarpūr Tānda	——	971; 973–4 A.H.	97× A.H.
Akbarnagar ..	Undated Ilāhī.	Ilāhī; 50 R.	994 A.H. (?) K.
Āgra	971–984 A.H.; 42 *or* 44 R–50 R.	963–988 A.H.; 42–50 R.	965–988; 40 R et seq.
*Alwar	——	Early.	965 (?), 967–8; 971–3 A.H.
Ilahābād or Ilahābās	——	40 R et seq.; Undated.	31, 32, 42 R.
*Amīrkot (?) ..	——	——	979, 989 A.H.
*Awadh ..	——	——	966–97× A.H.
†Elichpūr ..	——	Undated (N.S. xi).	——
†Bālāpūr ..	——	48 R (N.S. xi).	——
†Bāndhū ..	——	Undated (after 42 R)	——
Badāon ..	——	——	42 R ? (Valentine); 38 R.(HNW).
Birār (?) ..	——	42 or 43 R–49 R.	——
†Burhānpūr ..	45 R et seq.	45–50 R.	4× ; 47 R.
Bangāla	——	39 R; 1006–1011 A.H.	——
*Bahrāīch ..	——	——	967, 970–2; 975–978 A.H. (Vost).
*Bhakkar ..	——	984–986 A.H.	98× A.H.; 994 A.H. (?), (Rod)
Bīrāt	——	42 or 43 R–49 R (?)	971; 977: 979–982 42 R et seq.
*Pattan	984 A.H.	984 A.H.	984–5 A.H
Patna	983–987 A.H.	983–988 A.H.; 42 R et seq.	987 A.H.; 37 R (K 3614).
Tatta	——	38 R et seq.	——
*Jalālpūr ..	——	——	974 A.H. (Vost).
*Jalālnagar ..	——	——	985 A.H. (HNW).
*Jaunpūr ..	972–988 (N.S.V.).	966–989 A.H.	980–989 A.H.
*Chunār (?) ..	——	97× A.H.	967 A.H.
Chitōr	——	——	999–1008 A.H.
*Chitōr-Jaunpūr(?)	——	976 A.H.	——
Hiṣār	——	963 A.H.; Early.	37 R–38 R.
Hiṣār-Fīruzah ..	——	963–967 A.H.; 991 A.H. (K).	963–7; 974 A.H.; 996 A.H. (Rod).
*Khairābād ..	——	——	969; R.B.W.
Khairpur (?) ..	——	——	997 A.H.; 45, 47 R.

Akb. Mints.	Gold.	Silver.	Copper.
Dogāon	——	——	974, 976; 979–1005; 1011–13 A.H.; 44 R.
Dehlī	971 or 972–979 A.H. 982 A.H.	964–986 A.H.; 30 or 35 R et seq.	963–988 A.H.; 37 R. et seq.
Dewal Bandar	——	Undated; 42 (?) R (Dai).	——
Sironj	——	——	38 R. (N.S.V.)
Sarhind	50 R (D.C.)?	——	987 A.H.; 37-41 R.
Srīnagar	——	40–1 R; 45–50 R. 4× R.	37, 38, 40, 42, 43, 47 R.
†Salīmābād ..	——	——	1007 A.H.
*Salīmābād-Ajmīr	——	——	982 A.H.
Sambal	——	——	31 R (K 3610); Undated ½ Tanka; 44 R. (Oliver)
Sūrat	——	38 R.	——
Sahāranpūr ..	——	——	37–41 R.
†Sitpūr (?) ..	——	47–49 R.	——
*Shāhgarh Qanauj	——	——	968–9 A.H.
*Sherpūr ..	——	——	98× and 983 A.H.
*Shergarh ..	——	964; 966–7 A.H.	——
*Fatḥpūr	986–988 or 989 A.H.	985–989 A.H.	979; 982–989 A.H.
Kābul	Tangas, 971–2 A.H. (?)	Half-Dirhams (?); 44–50 R.	32–50 R.
*Katak	Square.	Square, 987.	——
Kashmīr	999 (?) A.H.	Local type, 994–5 A.H.	99× A.H. (Rod).
Kalānūr	——	——	37 R (Rod); 3× R (K).
*Kālpī	——	964–9 A.H.	963–9; 971–3 A.H.
*Korā Karra (?)..	——	——	37R ? HNW.
*Kiratpūr (?) ..	——	——	K. (No. 3606).
*Gadraula ..	——	967 A.H.	——
*Gobindpūr ..	——	——	44–48 R.
Gorakpūr ..	——	——	980–986 A.H.; –50 R.
Gwāliar	——	——	967–8; 987 A.H.; 38 R.
Lāhor	971–988 A.H.; 40–50 R.	963–989 A.H.; 36–50 R.	976–98–9 A.H.; 36–50 R.
Lakhnau	——	968 A.H.	963–989 A.H.; 1000 A.H. (K).
Lahrī Bandar ..	——	42 R (?); 47 R (K).	——
*Mālpūr (?) ..	984 A.H.	98 × A.H.	983–5 A.H.
*Mānakpūr ..	——	——	98× ; 987 A.H.
*Mānghar ..	——	——	968 A.H.
*Madankot ..	——	——	985 A.H. (K. No. 3588).
Multān	——	37 R–42 R.	37–41 R; 4× R.
*Mirta *or* Mīrat ..	——	——	987–989 A.H.
Nārnol[1]	——	Early; 971 A.H.	963-1006 A.H.; 49–50 R.

[1] I have taken the 42nd year as the extreme or outside limit, because the *Āīn* is expressly said in the Epilogue to have been *completed* on the last day of that year (Jarrett, *Āīn*, Trans. III. 445). But Abūl Faẓl so often states that the "time of writing" was the 40th year, that it would be open to any one else to adopt that year and not the 42nd. A classification of mints on that basis must, of course, differ in some particulars from the above synopsis, but the *net* result will not be materially altered.

Let me now note the principal points :

In Gold, Abūl Faẓl has four mints :

Mu'askar-i-Iqbāl (Camp of Fortune), Bangāla, Aḥmadābād and Kābul.

We possess the issues of Urdū Ẓafarqarīn, Akbarnagar, Āgra, Kashmīr and Lāhor.

I have shown that *Mu'askar-i-Iqbāl* and *Urdū Ẓafarqarīn* are really one and the same. I have also discussed in another note the question of the Bangāla mint and given some reasons for thinking that it was really situated at Akbarnagar. It is true that the two Ilāhī Muhrs we possess do not exhibit any date "beyond the Persian month," but that is no reason for supposing that they were *not* struck when the mint was first opened about the 39th year, to which the earliest rupee of Bangāla belongs.

The Kashmīr coin in the Panjāb Museum is a solitary specimen of which the date (999 A.H.) is admittedly doubtful, if not conjectural altogether. The coin is besides of the earlier or Kalima type. It seems to me that, like the similar Muhrs of Asīr and Udaypūr, it is, to all intents and purposes, not a true coin at all, but a "commemorative medal," as Mr. Lane Poole has justly described the former (B.M.C. Introd. liii). Indeed it is a question whether we are justified in assuming, on the strength of a *casual* issue of this sort, that there was a *regular* gold mint anywhere in Kashmīr. That there was no such mint at Asīr we may be fairly certain, as there are no other issues of Asīr at all, and Burhānpūr where there was such a mint is only a few miles off from Asīr. No government would think of maintaining two *first-class* mints within a dozen miles of each other, and it is paying no undue compliment, perhaps, to that of Akbar to suppose that it was not guilty of such an extravagance.

As for Āgra, the earliest gold coins are of the 42nd year. The Muhr in the Indian Museum (No. 75) is of Shahrīyar, the sixth month of the Ilāhī Calendar. The quarter-piece in the British Museum (No. 164) is of Bahman—the eleventh. Can it be that the mint was licensed to coin gold after Abūl Faẓl had revised his list ? [1]

I may also say that there are in three places incidental references to events which occurred in the 43rd and 45th years (Jarrett, *Āīn*, Trans. II. 196, 224 and 227), but there can be little doubt that they represent marginal additions or comments made *after* the formal completion of the work.

[1] Here again we should not lose sight of the fact that the *Āīn* by itself is a voluminous production, of which the Bibliotheca Indica edition is a large quarto of nearly a thousand pages. The lengthy epilogue which occupies more than fifty pages in Jarrett's translation is stated to have been finished on the last day of the 42nd year, but it does not therefore follow that the list of mints which occurs almost at the outset of the work was not revised for the last time *several months before that date*.

In reference to Lāhor, Mr. Nelson Wright says that the Ilāhī gold coins, " which are scarce, seem to have been issued first in the fortieth year, both the full muhr and its quarter being known " (I.M.C. III. lxi).[1] The muhrs have not been published, and it is perhaps permissible to invite attention to the *possibility of error* on account of the confusion between the symbol for zero and ' 5 '. Mr. Nelson Wright has read the date on certain Ilāhī Rupees of Dehlī as 30 R. Mr. Whitehead is sure that it is 35 R (P.M.C. lxxv). Dr. Taylor also confesses to have erroneously read ' 40 ' for ' 45 ' on some Ahmadābād *Tankas* (N.S. IV. p. 103).[2]

Abūl Faẓl tells us that gold coins were struck also at Aḥmadābād and Kābul.[3] We have not yet found any. But does it therefore follow that he was saying what was not ? By no means. They may turn up any day. Kābul and Aḥmadābād were both towns of the *first* importance in Akbar's dominions. Kābul was the capital of the northern quarter,[4] as Aḥmadābād was of the western, Bangāla of the eastern, and *Mu'askar-i-Iqbāl*, the place where the Emperor happened to be. constituted the centre of the empire. Aḥmadābād was at this time perhaps the wealthiest city in the country. The Mughal system was, as I have shown elsewhere, a system of Free Coinage in *all* the metals. " Any private individual had the right of bringing bullion to the mint and having it coined on defraying the actual cost of coinage at certain specified rates and paying a seigniorage of about five per cent " (Num.

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[1] The quarter-muhr was in the White-King collection; Catalogue, Part III, No. 3497.

[2] Mr. Nelson Wright himself calls attention to another example of this error in his note on Gobindpūr. "In the Lāhor Museum Catalogue," he writes, "are given four coins of the fortieth year, but it seems probable that forty-five has been mistaken for forty." I.M.C. III, Introd. xlvii.

[3] B.M.C. Nos. 26-29 are gold ' tangas ' of Akbar of the Central Asian type. Three of these weigh eighteen grains each, and the fourth (a half-piece) draws nine grains. No. 26 is of the year 971 H., No. 29 was struck in 972, and Nos. 27-8 have no date. The name of the mint is not given, but it may be fairly conjectured that they are all Kābul issues of the Great Emperor. Similar gold pieces of Humāyūn also are known (B.M.C. Nos. 8-10a ; I.M C. Nos. 13-14). Dr. White King had an exactly similar ' tanga ' bearing the name of Sulaimān of Badakhshān. (Num. Chron. 1896, Part II, pl. xi, No. 1 ; White King Catalogue, Part III., No. 3422). He had two gold ' tangas ' of Humāyūn also (*Ibid.* Nos 3454-5).

[4] Kābul was, morever, a great entrepot of commerce. The Emperor Bābur writes: "Kābul is an excellent trading centre ; if merchants went to Khīta or to Rūm, they might make no higher profit. Down to Kābul every year come 7, 8 or 10000 horses and up to it, from Hindūstān, come every year caravans of 10, 15 or 20000 heads-of-houses, bringing slaves, (*barda*), white cloth, sugar-candy, refined and common sugars, and aromatic roots, Many a trader is not content with a profit of 30 or 40 on 10. In Kābul, can be had the products of Khurāsān, Rūm, Irāq, and Chin (China) ; while it is Hindūstān's own market." A. S. Beveridge, Memoirs of Bābur, Trans. p. 202: Leyden and Erskine's Translation, 137.

Sup. XXVIII, pp. 64-5). This was of course subject to the condition that the mint was licensed to coin gold. But it is scarcely likely, considering the commercial demand for gold, that the privilege should have been withheld from the most opulent city in the empire. The case of Kābul is similar, and there would be nothing surprising in the future discovery of the gold coins of both those mints. It may be also worth recalling that we have Aḥmadābād muhrs of every one of the three *immediate* successors of Akbar, and Kābul gold pieces of Shāh Jahān as well as Aurangzeb.[1]

Let us now see how the account stands with regard to silver. According to our author, that metal had the honour of being stamped with the Imperial name in 14 places:

Mu'askar-i-Iqbāl, Bangāla, Aḥmadābād, Kābul, Ilahābās, Āgra, Ujjain, Sūrat, Dehlī, Patna, Kashmīr, Lāhor, Multān and Tānda.

Our list of the Middle Period contains the following names.

Ujjain, Aḥmadābād, Urdū Ẓafarqarīn, Āgra, Ilahābād, Bangāla, Birāt, Patna, Tatta, Dehlī, Srīnagar, Sūrat, Lāhor, Multān.

It will be seen that we can show silver coins of only twelve mints out of the fourteen, and possess no issues still, of Ṭānda and Kābul. At the same time we have Rupees of two mints, Tatta and Birat (or Birār) of which the writer does not appear to have known the existence.

I have shown elsewhere that the confusion between Patna and Tatta is unhappily only too common in Persian writing, and it is *just* possible that Abūl Faẓl really wrote Tatta here, and not Patna.[2]

As for Kābul, the discrepancy may, for aught we know, be more apparent than real. We possess copper coins struck at Kābul in the 32nd and subsequent years, but the earliest Rupees known are of the 44th. At the same time, there are in existence some half-Shāhrukhīs or 'Dirhams of the Central Asian type' bearing Akbar's name. Unfortunately, they exhibit neither the name of the mint-town, nor the date. Mr. White-

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[1] Mr. Whitehead informs me (February 1919) that there is an Ilāhī gold coin of Aḥmadābād mint dated Mihr, 42 R, in the collection of Sir John Stanley.

[2] Mr. Beveridge has pointed out an instance in the text of the *Akbarnāma* itself. At III. 91, l. 17, the Bibliotheca Indica text has 'Patna,' but "Blochmann [*Āīn*, Trans. I. 421] and the Lucknow edition have Tatta instead of Patna." *Akbarnāma*, Trans. III. 129 note,

The earliest Patna rupees are of the 42nd year. One of them only exhibits the month —*Shahrvar* (B.M.C. No. 209). The reading is probably correct, but Mr. Burn was "not quite satisfied" with it, "as the name is written differently from the ordinary way." He added that he had a coin of Aurangzeb in which the same difference was noticeable, but could not suggest a satisfactory reading. Mints of the Mughal Emperors. J.A.S.B. 1904, p. 79.

head has no doubt that they are "*Kābul* issues of the *first* years of this emperor" (P.M.C. Introd. xciii), but they may, for aught we know, belong to a later period. Kābul had been left by Humāyūn to his second son, Mirzā Muḥammad Ḥakīm, who died in 993 A.H. (XXXR). It was then only that that part of his ancestral dominions came *directly and completely* under Akbar's rule. The earliest half-dāms are of the thirty-second year. They are of the Ilāhī pattern, but the issues in silver may have been, for obvious reasons, permitted to wear 'the old familiar faces' for some time *after* the *regular* or *complete* annexation of the Province.

Kābul and Tānda were two of the most important cities in the Empire. Both of them had been for long the capital towns of great kingdoms, and the unaccountable thing is not that Abūl Faẓl has included them among the silver-mints of his time, but that they should be still unrepresented in our public and private collections. It may also be permissible to state, for what it is worth, that Tānda is one of those Mughal mints which are recognised by Dr. Codrington in his 'Manual.' It is true that no coins of Tānda have been published, and it is not vouched for either by Mr. Burn or by Mr. Whitehead, but it would be scarcely fair to Dr. Codrington to assume that he had no grounds whatever for registering this mint.

The reading of the name as well as of the date (42) on the rupees of Birāt (or Birār) is not quite certain. Supposing the date is really '*Bahman* 42' (the units figure is far from clear on I.M.C. No. 169, Pl. III), it still remains to say that the mint may have been first opened some time *after* the final revision of the list in that year.

There are in existence a very few coins of two other mints in reference to which there is the same uncertainty, *viz.*, Dewal Bandar and Lahrī Bandar. There was a rupee of the former in the White King cabinet, but it exhibited only the month (Khūrdād), and there was no sign of the year. (Num. Chron. 1896, Pt. ii, p. 160.) There are two specimens in the Panjāb Museum, but all that Mr. Whitehead can say of them is that the dates are Ardibihisht and Dai 4X, *probably*, 42 (P.M.C. Nos. 346-7).

Of Lahrī Bandar only three rupees are known. I can see no trace of a date on P.M.C. 483 (Pl. III), though the month (Āẕar) is clear. Mr. Whitehead reads "42 (?)" and leaves it admittedly doubtful[1]. May we not give Abūl Faẓl in these three cases the benefit of the doubt?

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[1] Mr. Whitehead informs me (February 1919) that he has a Lahrī Bandar Rupee which is undoubtedly of the 42nd year, but the month is *Dai*—the tenth in the Ilāhī series.

In all those cases in which the earliest issues are of the 42nd year, it may not be unnecessary to recall attention to the fact that we do not

It may be perhaps necessary to add that I myself see no difficulty in identifying Abūl Faẓl's Kashmīr with our Srīnagar, and beg permission to refer for the reasons to N. S. XXVIII, art. 177.

I also venture to think that the existence of a Mughal mint at Sūrat during the Middle period is no longer open to doubt. Even supposing P.M.C. No. 355 to be a forgery (which I submit it is not), Mr. Pannā Lāl's undoubtedly genuine Rupee of the 38th year (Num. Sup. XXVI, art. 161) settles the matter, and there are besides the so-called 'Coins of Gujarāt fabric.' Mr. Master's admirable paper on the subject is convincing so far as it goes, but it must not be supposed to go any further. He has proved conclusively that the Koris of Jāmnagar were called Maḥmūdīs in the 17th century, but it does not therefore follow that the same name was not borne simultaneously by other coins of very different types as to legends and lettering, but resembling them in weight and size. How many diverse kinds of silver money were all called, for similar reasons, *Rupees* even within the last hundred years? Besides, it is not easy to conceive how those Maḥmūdīs which are said, by so many European travellers, to have been the most familiar medium of exchange in Sūrat and its neighbourhood, and which are not infrequently mentioned also by the Persian historians of the period, could have been no other than the issues of the remote and by no means wealthy or powerful chief referred to. The 'Coins of Gujarāt fabric' are obviously half-rupees modelled on the local currency of the Gujarāt Sultans, and I am not aware of any grounds for positively asserting that they have no connection with the Mughal mint of Sūrat.

We now come to copper, and this part of Abūl Faẓl's list contains no less than 42 names in the aggregate, *viz.*

Mu'askar-i-Iqbal, Bangāla, Aḥmadābād, Kābul, Ilahābās, Āgra, Ujjain, Sūrat, Dehlī, Patna, Kashmīr, Lāhor, Multān, Tānda, Ajmer, Audh, Atak, Alwar, Badāon, Banāras, Bhakkar, Bhīrah, Pattan, Jaunpūr, Jālandhar, Hardwār, Hisār Firūza, Kālpī, Gwālīār, Gorakhpūr, Kalānūr, Lakhnau, Mandū. Nāgor, Sarhind, Siyālkot, Sironj, Sahāranpūr, Sārangpūr, Sambal, Qanauj, Rantanbhūr.

We can put together specimens of not more than twenty-three or twenty-four of them.

Urdū Ẓafarqarīn, Akbarnagar (?)[1], Aḥmadābād, Kābul.

know in what month of that year the list was for the last time revised. We might also do well to bear in mind that if the line of demarcation is drawn at the 40th year, all these mints—Patna, Birāt, Dewal Bandar, Lahrī Bandar—would not have to be brought into the reckoning.

[1] The Akbarnagar *fulūs* was in the White King Collection (Catalogue, Part III, No 3670). The date 994 A. H. lays it open to suspicion. Akbarnagar was founded several years afterwards (1002-3 A. H). There must be an error somewhere. If the date has been correctly read, the

Ilahābās, Āgra, Ujjain, Dehlī, Patna, Srīnagar, Lāhor, Multān, Ajmer, Atak, Badāon, Hiṣār, Gwālīār, Gorakhpūr, Kalānūr, Lakhnau, Sarhind, Sironj, Sahāranpūr, Sambal.

We have besides the issues of five mints of which Abūl Faẓl takes no cogṇisance, *viz.*

Birāt, Chitor, Khairpūr, Dogāon, and Nārnol.

There is no denying that the discrepancies, in this instance, are numerous and disconcerting. Out of a total of 42, we have nothing at all to show for nineteen. But does that prove that the list is 'incomplete' or 'imperfect'? The boot is, if I may be excused for saying so, just on the other leg. It only means that it is a great deal too full, too complete. If it errs, it does so, not so much by defect as by surplusage. Far from proving that Abūl Faẓl is 'inaccurate,' it implies that we have attained but indifferent success in unearthing the Akbarī issues in copper. It is common knowledge that the serious search for Mughal dāms and fulūs began only about forty years ago. A few coins found in a small district (Kāngra) enabled Mr. Oliver in 1886 to add several new mints at a bound. Even in 1892. Mr. Lane Poole complained that the "rarest of all Mughal coins were those of copper." Ten years afterwards, Mr. Dames stated that no less than twenty-nine new mints of *Akbar alone* had been since (1892) brought to light (Num. Chron., 1902, p. 277), about half of which were exclusively copper-ateliers. Several others have become known within the last fifteen years, and a glance at the two most recent Catalogues must suffice to convince any one that there are in each several pieces which are altogether mintless, or on which it is now impossible to decipher the name of the place of issue.

A few words about the five other places apparently ignored by Abūl Faẓl may not be out of place.

And first, about Birāt (بيراة). Abūl Faẓl has the name بيهره Bīhrah. We have no coins of Bīhrah, but we have several of Bīrāt—a place of which he himself says elsewhere that it "had a copper mine so profitable that from a *man* weight of ore, they obtain 35 *sers* of metal" (Jarrett, II, 181: Text, I, 442). May it not be that بيهره is a miswriting or misreading of بيراة [1]

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mint-name must be wrong. If the latter has been rightly deciphered, the date will be found to require revision.

[There is nothing surprising in the scarcity of Bengal copper coins. Not more than two billion coins of the Bengal Sultāns are known, and no copper has been found bearing the name of any of the Sūrī mints in that Province. *Ed.*]

[1] This name would appear to have puzzled not only the copyists of the *Āīn*, but its translators. It is written بهيره at p. 27 of the *Bibliotheca Indica* Text. At p. 31 of Blochmann's translation, it is 'Bahirah,' but we are asked to read 'Bahīrah' in the Table of Errata. The name of

There is very high authority for deciphering the name on several dāms dated 999-1008 A.H. as Chītor, but the reading is not so clear as might be wished. Mr. Oliver was in favour of Qanauj (J. A. S. B., vol. lv, 1886, pl. II, fig. 23). Rodgers thought the "coins ought to be of the Jaipūr mint (جیپور) as the word is without dots, but Jaipūr was not in existence in the time of Akbar." (Indian Antiquary, 1890. p. 222) Col. Richard Carnac Temple gave it as his opinion that it was neither چیتور nor جیپور but چنور or قنوج (*Ibid.*, note). It may be perhaps necessary to recall the fact that Chitor is not, and that Qanauj *is*, one of Abūl Faẓl's copper mints of the Middle period.

The Indian Museum has Ilāhī pieces of a mint called Khairpūr, but they are of the 45th and 47th years. Mr. Whitehead has read the name on a coin of very different type dated 997 A.H. as Khairpūr. I have discussed the point elsewhere at some length, and here must content myself with the suggestion that the reading stands in need of revision, and that all these coins are probably of *Ujainpūr*.

The peculiar thing about Dogāon is that though the name is conspicuous by its absence in the list before us, Abūl Faẓl himself notes elsewhere in the *Āīn*, that "in the vicinity of the town [*scil.* Bahrāich] there is a village called *Dokon* which for a long time *possessed* a mint for copper coinage." نزدیک این شهر موضعی است دوکون نام - از دیر باز دار الفلوس (Jarrett, II, 172, *Bibl. Ind.* Text, I, 433).[1] It is clear that the author was not

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'Bīrāt' is written پرات at p. 357 of the *Āīn* and بیرات and برات are noted as variants at p. 358. At p. 442, it is written پیرانه. In Jarrett's translation, we have *Parāt* at II. 96 and *Perath* at II. 181. Gladwin has *Beerat*, Tieffenthaler *Berāth*. *Description De l'Inde*, Ed. J. Bernouilli, 1786, I. 212-3.

[1] The town of Dugāon (دوگون) is mentioned once in the *Akbarnāma* also in connection with the death of 'Arab Bahādur who had chosen "a residence in the hill country of Bahrāich to the north of Dugāon and near a black mountain." Beveridge. *Akbarnāma*, Trans. III, 745, Text III, 492. '*Dukam*' دوکم is also one of the hundred and odd towns and cities of Hindustān which are set out in Abūl Faẓl's Tables of Latitudes and Longitudes. Jarrett, *Āīn*, Trans. III. 59—Bibl. Ind. Text, II. 33. Col. 1, l. 11.

The case of Nārnol is very similar to that of Dugāon. In his account of the Sarkār of Nārnol, Abūl Faẓl expressly states that "Singhāna Udaipūr has a copper mine and *mint for copper coinage*," and two other Maḥāls, Bābai and Kotputlī are also said to possess copper mines. Jarrett, *Āīn*, II. 194. And yet the name of Nārnol is conspicuous by its absence from the list. Can it be that ناگور is a miswriting or misreading of نارنول ?

ignorant of the existence of the mint, but then why has he omitted it ? It may have been due to some oversight or inadvertence, but another explanation is just possible. The earliest Dogāon coin is of 974 A.H. We have issues also of 980, 986, 988 after which last there are "Dāms of most years up to 1003 A.H." (I.M.C. xliv). Mr. Whitehead has one of 1005 A.H. None of these issues are of the Ilāhī type. Then there is a break and we have half-tankas of the 44th year, and then again Dāms of 1011 and 1013 A.H. Can it be that the mint was *temporarily* suspended when Abūl Faẓl wrote, for some reason unknown ? It had been perhaps too prolific.

Here again, I may be allowed to invite attention to the fact, *quant. val.*, that Jālandhar, and Sīyālkot are included in Dr. Codrington's list of Mughal mints.[1]

It is due to a friendly critic to notice his "simple explanation" of the embarrassing surplus of names in this part of the list. It is that Abūl Faẓl has carelessly jumbled together the ateliers of the Middle period of which alone he was professedly writing, with those of the Early or Antecedent one. Now, Abūl Faẓl's laborious accuracy and "conscientious collection of facts" have not been denied even by those who have no great admiration for his style or character, and he is scarcely likely to have committed such a blunder or so soon forgotten the limitations he had set upon himself. Besides, there is no trace whatever of any such muddle in the sections relating to gold and silver; then why here ? Apart from this, there are other reasons for rejecting this hypothesis. An examination of this catalogue of forty-two copper-mints shows that there are in it not more than six or seven places of which we possess issues of the First or Early Period, and not of the Middle or Second. They are Awadh, Alwar, Bhakkar, Pattan, Jaunpūr, Kālpī and Qanauj (?) On the other hand, it is to be noted that there are no less than fourteen names which are quite new, and of which no coins whatever of the Early Period have been discovered, *viz.*, Atak, Badāon, Banāras, Jālandhar, Hardwār, Kalānūr, Mandū, Nāgor, Siyālkot, Sironj, Sahāranpūr, Sārangpūr, Sambal and Rantanbhūr. And what is still more worthy of attention is that six, if not seven, of these *new* names are actually represented in our collections, *viz.*, Atak, Badāon, Jālandhar (?), Kalānūr, Sironj, Sahāranpūr, and Sambal. Of the remaining seven or eight towns we can show no copper coins of the Second Period, but then they [*viz.*, Banāras, Jālandhar (?), Hardwār, Mandū, Nāgor, Siyālkot, Sārangpūr and Rantanbhūr] do not appear to have struck any *dāms* or *fulūs* in the First or Early Period either.

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[1] Mr. Whitehead informs me (February 1919) that he possesses an Ilāhī *dām* which he is "morally certain is of Jālandhar mint." The year is 4x.

It is clear then that this 'simple' theory cannot be accepted, and some other way of accounting for the presence of these seven names of the Early Period has to be sought. I venture to offer, for what it is worth, a suggestion which has occurred to me.

When the Imperial mint-system was reorganized and the currency of the realm remodelled, the number of places licensed to coin the two precious metals was considerably reduced, probably with a view to secure more efficient supervision and a greater uniformity of standard. The privilege of issuing muhrs and their fractions was withdrawn from all but four places, and that of striking silver pieces was conferred on only fourteen towns in the Empire. It was not thought advisable or necessary to be so strict in regard to copper.[1] All the ordinary exchanges of the common people were conducted in that medium, and the demand for Dāms was enormous everywhere. The number of copper mints (which in the earlier period had been about 39) was therefore not only not reduced, but slightly augmented. It is probable that this was done with a view to ease the situation, not unlikely to be created, by the closing of so many mints to the coinage of gold and silver. At the same time, the 42 mints were rearranged and their geographical distribution made much more equal.

In this readjustment, all the places of any importance, historical, political or commercial, which had formerly enjoyed the privilege of striking copper, *viz.*, Awadh, Alwar, Bhakkar, Pattan, Jaunpūr, Kālpī and Qanauj were, for the nonce, not deprived of it. Others, however, were, much more severely dealt with. Akbarpūr, Amīrkot, Bahrāich, Jalālpūr, Jalālnagar, Khairābād, Sherpūr, Fathpūr, Katak, Kora, Kiratpūr, Mālpūr, Mānakpūr, Mānghar, Madankot and Merta (?) were all disfranchised. The reasons for this differential treatment are not difficult to understand. Most of them were third or fourth-rate towns which were not rising in the world but declining or decaying, and several of them have since sunk into such obscurity that it is now no easy task to determine their exact situation. The name of Bahrāich was removed probably because Dogāon which had taken its place was much more

[1] In this connection, the following observations of Thomas will bear quotation. "The practice of striking coin in subordinate cities also appears to have been an innovation introduced by the Mughals, *who drew a wise distinction between the importance of the local currency of copper and money fabricated from the more costly gold or silver.* The absence of the Sultan's name likewise indicates a departure from Indian practice, under which we have uniformly seen the designation of the supreme authority impressed upon the copper money equally with the coins of higher value." Chronicles, 384. With all his fondness for innovation, Akbar appears to have followed the traditional policy and allowed the copper currency to remain on a *lower* footing.

advantageously located. The recently founded Ilahābād had supplanted Kora (Karra ?). Fathpūr had lost its short-lived importance since the Emperor had ceased to reside there, and Merta (?) was deprived of its licence, perhaps because Rajpūtāna possessed, even without it, more than its fair share of copper mints.

There is another point also which it is necessary to bear in mind. Copper had been coined so profusely within the preceding fifty years by the Sūrīs, and likewise by Akbar, that in some places no great necessity of striking Dāms in any quantity was likely to be felt. The privilege of issuing them was, nevertheless, not withdrawn from the more important towns which had possessed it under the old regime They were to exercise the right and avail themselves of the permission if there was need; they would remain inactive, if the local supply was not insufficient for the demand. This probably accounts for the fact of our having not yet discovered the Ilāhī or Middle-period issues of some of the older mints (Alwar, Awadh, Bhakkar, Pattan, Jaunpūr, Kālpī and Qanauj), and the extreme paucity of the mintages of some towns on which the privilege was conferred for the first time under the new system (Badāon, Kalānūr, Sarhind, Saronj, Sambal, Sahāranpūr). Their names are in Abūl Fazl's list, they were permitted to coin, and we have indubitable evidence of their having availed themselves of the permission, but the existing supply of Dāms was really so large that the necessity for doing so would appear to have arisen but casually and intermittently. The mints were in theory open, but they appear to have been for the most part in a state of "suspended animation." Briefly, it would seem as if Akbar's advisers had, in their anxiety to provide some compensating machinery for neutralising the contingent disadvantages of the restrictions on the minting of gold and silver, been over-liberal in regard to copper. They had made the pendulum swing too much both ways. The number of places permitted to coin the precious metals was, in fact, too small. that of those licensed to coin copper really too large. The fact did not eventually fail to make itself evident. and we find a great change with the accession of Jahāngīr. for whose reign we have 14 gold mints, 27 silver mints, and only 9 copper mints. The corresponding numbers for the reign of Shāh Jahān are 23, 35 and 15 (G.P. Taylor, Num. Sup. XXII. 181-2). These figures speak for themselves.

The net result of this enquiry seems to me to be that Abūl-Fazl's inventory for the part or period of Akbar's reign about which he was writing is, on the whole, much fuller and more exhaustive than our own lists. Altogether, he has to his credit more than twenty-two mints for which we have nothing yet to show. It is true that there are, on the other

side of the account, eight or nine *ateliers* which are apparently ignored in the *Āīn*. But, then, the readings of names and dates on which the question of the inclusion of most of them in the Middle Period of Akbar's reign depends, are themselves not free from doubt and uncertainty. My submission, therefore, is that in view of our own inadequate equipment and information, we are scarcely justified in assuming an attitude of superiority and delivering judgment against him. Far from having outstripped him, we are still lagging very much behind, and our own knowledge of the Akbarī mints is neither so exact nor so complete as to entitle us to brand him with ignorance of the facts of his own day.

This does not mean that the *Āīn* list is absolutely perfect. I am no believer in the infallibility of Abūl-Faẓl or of any other author, living or dead. I have no doubt myself, that when we are much better qualified (as I trust we shall be in the not distant future) to pronounce a really weighty opinion, some errors here and there will be found. It is to be remembered that the text of the *Āīn* has filtered through, perhaps, a score of muddy and corrupt transcripts before descending to us. It is not at all unlikely that two or three of these forty names have been miswritten by the copyists. It is also not impossible that one or two were read or transcribed incorrectly by Abūl Faẓl himself. I know from my own study of his Summary Accounts of Todar Mal's Rent-roll that he was occasionally unable to decipher the place-names properly, and made mistakes in transferring them to his pages.

When all these allowances—allowances for the defects inherent in the Persian script, for the illegibility of the written records on which he had to rely, and also for human error, are made, and when that *terra incognita* which still disfigures the numismatic chart of the Akbarī region has been thoroughly explored. it will probably be found that this much-abused inventory is not so hopelessly 'imperfect' or 'inaccurate' as it has been thought.

S. H. Hodivālā.

Junāgadh, 10*th Jan.* 1918.

Postcript.

The preparation of an absolutely complete list of all the coins of any ruler, who has issued money of all denominations so profusely as Akbar, for nearly half a century, must be an almost impossible achievement. It would be, therefore, presumptuous to imagine that no errors or omissions will be detected in the Chronological Synopsis contained in this article. I can only trust that it will not be found very inaccurate or incomplete in the present state of knowledge. I should not have ventured to say so, if the list had not been carefully

scrutinised by Mr. H. Nelson Wright, Mr. R. B. Whitehead and Mr. W. E. M. Campbell. To all of them I have to make acowledgments for bringing to my notice some points which stood in need of reconsideration, and furnishing the dates of several unpublished coins in their own collections and the Lakhnau Museum.

In regard to the Lāhor gold-pieces of the 40th Year Ilāhī, it is due to Mr. Nelson Wright to state his own view of the case, and transcribe the following observations from a letter of his dated 25th April, 1920: "Regarding the remarks about the Lahor gold coins on p. 15," he writes, "the Muhar and ¼ are my own and you may take it there is no possibility of error. Both are clearly 40 (۴۰) and could not be read 45. The 0 is just a dot. I send you a bad rubbing of the date on the Muhar. It has struck me whether 'Mu'askar-i-iqbāl' in Abul Fazl's gold list might mean that wherever Akbar happened to be that place had the privilege of striking gold (and other) coin—in its own name, if it had facilities—quite apart from the 'Urdu Zafar qarin' issues. This might explain the gold coins of Lahor of 40 I. for Akbar, was, I think, at Lahor in 40 I."

The suggestion is not unworthy of consideration, though, of course, there are difficulties in the way of its acceptance. I have myself described the *Mu'askar-i-Iqbāl* as "the place where the Emperor happened to be," and represented it as constituting "for the time being, the centre of the Empire" (p. 15 *supra*). It is clear that when Akbar's headquarters were in Lāhor Fort, two different mints would be simultaneously at work within the limits of the city, the town's own mint and the Camp-mint attached to the personal establishment of the Emperor. It is not unlikely that some confusion occasionally arose in consequence. It should be remembered that Lāhor was, to all intents and purposes, the real capital of the Empire during the fourth decade of the reign and about three years of the fifth, and Abūl Fazl repeatedly speaks of it as the دار الملک (*Akb. Nām.* Text. III. 733 l. 24), and نهضت گاه (*Ibid.*, III. 747, l, 15 and *Ain*, Text, I. 76, l. 10, Trans. I. 68). It is not at all unlikely that the actual name of the 'place of striking' may have been sometimes inscribed by the mint-masters and engravers on the issues of the Emperor's private mint, instead of the indefinite and nondescript designation. 'Camp associated with Victory.' It may be noticed that the name *Urdū Zafarqarin* does not appear at all on the gold and silver coins of Akbar after the Alf—or thousandth year of the Hijra, and that, during the last sixteen years of the Great Emperor's reign, its exhibition is permitted only on the humbler issues in copper. Akbar was perpetually innovating in small things, and it is a question if we may not see in this departure the beginning of the end—the first step towards the abolition of this migratory *atelier*. The all but complete dis-

appearance of this curiously-named mint in the reigns of Akbar's successors (the three known exceptions only prove the rule) lends some support to this conjecture. We know from Roe, Bernier and Manucci that the emperors continued to be accompanied in their progresses by all the Imperial *kārk̲hānas*. We may be sure that the Mint was one of them, and that coins were freely struck and the سرا اضرب حضور or 'His Majesty's Own Mint,' set to work whenever there was any necesstity of doing so. But the old practice of stamping the words, اردو ظفرقرین was, for reasons not at all difficult to understand, discontinued, and the name of the nearest town or city inscribed in its stead. Jahāngīr's issues of Ajmer, Ujain, Kambāyat and Mandū which are practically restricted to the years on which that Emperor *is known* have had his camp in those towns, may, perhaps, be cited as early examples or illustrations of the new type of Camp-issues. The same remarks may probably be made of Shāh Jahān's very rare rupees of Ajmer and Fatḥpūr, and some of the coins issued from two or three obscure places in the Dekkan during the years in which Aurangzeb personally directed the campaigns against his irrepressible foes, the Marāṭhās.

S. H. Hodivālā.

The College,
Junāgadh, 1*st May*, 1920.

211. NOTES AND QUERIES REGARDING MUG̲HAL MINT-TOWNS.

Itāwah and Itāwā.

In the Notes on 'Kanjī' and 'Mānghar' (N.S., XXXI), I have laid some stress on the fact that the Mug̲hal spelling of Indian place-names is neither so capricious nor so arbitrary as is sometimes supposed, that all those toponyms which are, or deserve to be well known, are written in a fairly uniform manner by the better authors, and that when there are alternative or double forms, it is often possible to account for them. I beg to invite attention to-day to the *raison d'être* of the form ایٹاوہ which is familiar to numismatists.

The earliest known coin of this mint is a Niṣār of 1097 A.H., the earliest coin published a rupee of 1098 A.H. The latter is in the Indian Museum, which possesses "a fine series of the rupees" of Aurangzeb 'Ālamgīr. "In 1109—forty-second year, the mint which hitherto had been written ایٹاوہ is spelt ایٹاوا and this spelling is retained to the end." (H. N. Wright, I.M.C., III, Introd., xlv.)

The question is, why was the orthography altered? To this the contemporary historian K̲hāfī K̲hān furnishes an answer which is quoted and translated below:

سابق از زمانِ قدیم اسمِ بعضی بلاد و معمورها و قلعها که بزبانِ هندي شهرت دارند و آخر آن در تلفظ حرفِ ها میل بالف ظاهر مي شود مثل مالوه و بنگاله بکلانه و پر ناله مي‌نوشتند میر هادي مخاطب بفضائل خان که بخدمت دار الانشا مامور بود بعرض رسانید که در زبان و رسمِ خط هندي آخر هیچ کلمه و اسم صریح حرف ها نیامده اگرچه الف هم اصلا در کلمهٔ هندي نمي آرند و از جملهٔ سي حرف سیزده حرف الف و حا و خا وثا و ذال و زا و صاد و ضاد و طا ظا و عین و غین و قاف باشد در کلمه و کلام هندي بالکل متروکند و در نوشتن و تلفظ نمي آیند داخل حروف هندي نمي شمارند مگر آنکه عوض عین و الف و همزه حرفی دارند که اول کلمه در تحریر و تقریر مي آرند و در وسط و آخر کلمه اصلا نمي آید اما از آنکه از جملهٔ ده دوازده اعراب که برای حرفِ هندي موضوع است و مدار مرکب ساختن حروف برآن است یکی را باسمِ کانا نامند که از برای آخر کلمه وضع کرده اند و آن را بصورت الف مي نویسند و بمخرج الف نیز مي خوانند این همان الف است که منشیان فارسي از ابتدای اسلام هندوستان سهوا بها در فارسي مینویسند باید بالف نوشته شود بعد عرض پسند پادشاه نکته سنج آمد و درین سال حکم فرمودند که آینده بجاي ها الف مي نوشته باشند مثل بنگالا و مالوا و بگلانا هرکه بخط هندي آشنائی دارد لطفش را خوب غور میتواند نمود * Bibl. Ind. Text. II. 399.

"In former times, the names of several towns, cities and fortresses which are known by their Hindū (or Indian) names (*lit.* which are celebrated in the languages of the Hindūs), and (*lit.* in the pronunciation of which an 'h' (*hā*) merging into inclining to) an 'a' (*alif*) has to be sounded, were written Mālwah [مالوه], Bangālah [بنگاله], Baglānah [بگلانه], Parnālah [پر ناله]. Mīr Hādī, entitled Faẓāil Khān, who was now placed in charge of the Secretary's department, submitted that a distinct 'ha' [ह] is never found at the end of any word or proper name in the spoken or written language of the Hindūs, although it is true that an 'alif' [अ] also is never written [as such] at the end of an Indian word. Of the thirty letters [of the Arabic alphabet], thirteen letters, *viz.*—'Alif,' 'Ḥā,'

'Khā,' 'Thā,' 'Zāl,' 'Zā,' 'Ṣād,' 'Ẓād,' 'Ṭā,' 'Ẓā,' 'Ain,' 'Ghain' and 'Qāf' are altogether absent in Indian words and Indian speech, are never used in writing or pronunciation, and are not reckoned as letters at all. In place of the 'alif,' the 'ain' and the 'hamza' they have a letter [अ] which is written [in that form] and sounded [as such] only at the beginning of a word, but never in its middle or end. But of the ten or twelve vowel signs which are employed (*lit.* fixed) for (*i.e.* in writing) Hindū words and which are indispensable for combining (*i.e.* vocalising) their letters, one is called the Kānā [the sign of the long vowel in आ] and this alone is used (*lit.* fixed) at the end of a word. It is written like an 'alif' [*i.e.* it is an upright stroke just like the 'alif'] and sounded (*lit.* ejected, expressed) also just as if it was an 'alif.' For this sign which is really an 'alif,' the Persian munshīs have, since the beginning of Islām in Hindustan, erroneously substituted a 'hā.' It should [correctly] be [represented] in transliteration (*lit.* writing) by an 'alif.' His suggestion (*lit.* request) met with the approval of the critical Emperor, and orders were issued in this year [XXXVI R. Y. 1103–4 A. H.] that in future, an 'alif' should be written instead of the 'hā', *e.g.* Bangālā (بنگالا), Mālwā (مالوا), Baglānā (بگلانا). Whosoever is acquainted with the Hindī alphabet must profoundly appreciate (*lit.* meditate upon) the propriety (*lit.* beauty, elegance) [of this distinction]."

In a word, the contention of Faẓāil Khān[1] was that the letter अ was the true equivalent of the Arabic 'alif,' that the *Kānā* or upright stroke which took its place in the middle or at the end of a word in the Indian vernaculars possessed the same phonetic value, and that the Persian munshīs who had been employing a 'hā' (ه) to represent it, were in error. He was therefore of opinion that we should write بنگالا, مالوا, اتاوابگلانا, اوسا. ستارا, کورا, کرپا etc. The argument appears to have found favour not only with Aurangzeb, but with his successors, and the numismatic evidence indicates that a lasting change was effected in the official system of transliteration.

We possess no coins of Mālwā or Baglānā and none of

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[1] Mīr Hādī Faẓāil Khān was a favourite of the Prince Muḥammad A'aẓam Shāh and one of the most learned men of his times. Having incurred Aurangzeb's displeasure, he was disgraced and imprisoned in the fortress of Daulatābād in the 25th year of the reign. He was afterwards released and spent several years in retirement at Āgra. Aurangzeb then took him once more into favour, and he was appointed Mīr Munshī and Imperial Librarian. In the 44th year, he was made *Diwān-i-Bayūtāt* and became *Nāib-i-Khān Sāmān* sometime afterwards. He died in 1114 A.H. *Maḥṣiru-l-Umarā* III, 38-40. There are several references to him in the *Maāṣir-'Ālamgīrī* also. Bibl. Ind. Text, 352, 361 432, 457 and 471.

Bangāla after some Rupees of Akbar, but we have the issues of **Itāwā, Owsā (Aūsā), Satārā, Karpā, and Korā.**

The name of the first of these five towns is invariably spelt with a final 'hā' by all the *earlier* writers. (Abūl Faẓl, *Āīn*, Bibl. Ind. Text, I, 443; *Akbarnāma*, *ibid.*, II, 100, 115, 187, 270, 298; III, 19, 88, 278, 309, 415, 426; *Bādishāhnāma*, *ibid.* I, 191; *'Ālamgīrnāma*, *ib.*, 127, 237, 440, 475, 604, 765, 874, 885).

On the coins also, it is اتاوه before 1109 A.H.; afterwards, it is always اتاوا. Mr. Whitehead says (P.M.C. Introd. xxviii) that the only exception known to him is a rupee of Aḥmad Shāh in the Panjāb Museum (No. 2642).[1]

Again, Aūsā (Owsa of I. G. XIX, 294) is spelt اوسه in Abūl Faẓl's *Akbarnāma*, III, 800; *Bādishāhnāma* I, i, 356; I, ii, 136, 140, 151, 154, 158; II, 221, 709; *'Ālamgīrnāma*, 1007, 1014 and other works written *before* the year in which the order was issued (1103 A.H.). But on the coins of Bahādur Shāh Shāh 'Ālam I, Farrukhsīyar, Muḥammad Shāh, and 'Ālamgīr II, it is always اوسا.[2]

So also, Abūl Faẓl writes ستاره (*Akbarnāma* III, 795), but on the coins of Muḥammad Shāh the name is ستارا.[3]

On the coins 'Cuddāpah' is written كرپا exactly in accordance with the rule laid down by Aurangzeb, though the earliest are of the XXXVIIth year—the year next succeeding the one in which the order was (according to Khāfī Khān) for the first time issued.

Lastly, Muḥammad Kāẓim of the *'Ālamgīrnāma* and others who wrote before 1103 A.H. affect the spelling كوره[4] but on the

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[1] Attention may, however, be invited to B.M.C., 829 and 831 which are dated 1114 and 1115 A.H., and yet have اتاوه. Mr. Whitehead informs me (February 1919) that the name is written in the old way on a rupee of Muḥammad Shāh also which is in his own cabinet.

[2] In the *Maāṣiru-l-Umarā* which was commenced about 1155 A.H. and completed in 1193 A H., the name is thrice written اوسا. *Bibl. Ind.* Text, II, 837; I. 196, 206.

[3] Both forms occur in the *Maāṣiri-'Ālamgīrī*. We have ستاره on pp. 336, 413, 420 and 421; ستارا on pp. 401, 412, 425, 444. The *Maāṣiru-l-Umarā* has ستاره at I, 328 and II, 351, 503, 876 and ستارا at II, 512 and III, 42.

[4] We have كوره in *Akbarnāma*, Text, III, 426, كوره in *Āīn*. Text, I, 349, 430 and كوره in *Maāṣiri-'Ālamgīrī*, 12 as well as *'Ālamgīrnāma*, 241, 271, 285.

coins of all the regular emperors from Rafi'u-d-darajāt to Shāh 'Ālam II, the terminal letter is an '*alif*.'

S. H. Hodivālā.

Junāgadh, 20*th December*, 1917.

Islāmābād.

The difficulty of fixing the site of the Islāmābad mint has been felt by all serious students of Mughal Numismatics. Chākna, Chittāgong, Rāirī and Mathura are all said (by Mr. Whitehead) to have borne that name in the days of Aurangzeb But this does not exhaust the list of towns called Islāmābād whose pretensions it is not easy to determine.

There is an Islāmābād in Kashmīr also. We are told that it "was once a large and prosperous place," and that the well-known spring called the Anant-nāg flows from its foot. (Imp. Gaz. XIII, 371). We learn from the *Bādishāhnāma* that it was Shāh Jahān who ordered the pargana or township of Incha (انچه or ۵نچه), the 'Anyech' of Stein (Geography of Kashmir, J.A.S.B., 1899, p. 178), to be called Islāmābād. (*Bibl. Ind.* text, I, ii, 49-50.) The town is referred to under one or other of these names in several other places also. (*Ibid.* II. 209, 428, 433; *Tūzuk-i-Jahāngīrī*, Rogers and Beveridge, Trans., II, 174; *'Ālamgīrnāma*, *Bibl. Ind.* text, 835; Thornton, Gazetteer, New Edition, p. 430).

The same emperor appears to have given the very same name to another town called Chhatra (چهتره) in Bundelkhand (*Bādishāhnāma*, I, ii, 122; see also *Maāṣiru-l-Umarā*, I, 427). This is probably identical with Jatāra, now the largest Taḥṣīl in the feudatory state of Orchhā. (Imp. Gaz. XIX, 246).[1]

Supposing that any claims which the last two competitors may appear to have are rejected on the ground of obscurity or remoteness from the highways of politics and commerce, those of the other four still remain to be discussed.

In regard to them, I beg to invite attention to some points of interest, which have escaped notice. The first is that the real Mughal name of Rāirī was not Islām*ābād*, but Islām*gadh*.

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[1] Thornton (Gazetteer, New Edition, p. 430) mentions an Islām*ābād* or Islām*nagar* or Islām*ghar*, five miles north of Bhopāl (Lat. 23° 20′, Long. 77° 25′). It is however quite modern. "It was originally called Jugdispūr, and received its present name from Dost Muḥammad Khan, the founder of the State of Bhopal, who took it by surprise, from a Hindu zemindar, its previous holder." Tieffenthaler calls it 'Esslamnagar' (Description de l'Indo, I. 355) and that appears to be the real name. According to the Imperial Gazetteer, Dost Muḥammad founded the towns of Islām*nagar* and Bhopāl about 1720 A. C. (Ed. 1908, VIII. 128). An Islāmābād in Mālwa is mentioned by Firishta in his account of the independent rulers of that province. Briggs' Translation, Calcutta Reprint. 1908, IV, 197-8.

The statement made by Mr. Whitehead (P.M.C. Introd., p. xl) on the authority of Mr. Sarkār's 'India of Aurangzeb' is based on the admittedly corrupt single transcript of the *Chihār Gulshan* on which the translator had, for want of a duplicate, to rely. It is clear from a much better authority, the *Maāṣir-i 'Ālamgīrī* that the true reading is 'Islāmgadh'. The author of that excellent contemporary chronicle informs us that in the 41st year of the reign of Aurangzeb (1108-9 A.H.) "Ism'aīl Khān Mukha was appointed Faujdār of *Islāmgadh urf-i-Rāhirī*" (*Bibl. Ind.* text, 387, l. 13).[1] There is a very similar statement in the article on Rāigarh (*i.e.* Rāhirī, *vide* Grant Duff, Bombay Reprint, p. 85) in the *Imperial Gazetteer*. The writer says that Rāigarh was, on the final conquest of the Aḥmadnagar Kingdom by Shāhjahān, made over by the Mughals to the Sulṭāns of Bijāpūr, and given by the latter to the Sīdī of Janjīra "under the name of *Islāmgarh*" (XXI, 47). This should put Rāirī or Rāhirī definitely out of court.[2]

Let us now consider the claims of Mathura. Mr. Whitehead says (P.M.C., p. xl) that there is an Islāmābād coin of 1079 A.H. in the British Museum. He now (February 1919) informs me that he "knows of coins in both gold and silver of the year 1074 A.H." My point is that the existence of Islāmābād issues of 1074 and 1079 A.H. is a most significant fact. According to the historians, Mathura was not called Islāmābād before Ramaẓān 1080 A.H. There *seems to be* in the *Maāṣiri-'Ālamgīrī* an explicit statement to that effect.

و همدرین شهر کرامت بهر از پیشگاه انصاف پروري و اعتساف براندازي
و پادشاه حق آگاه * * * پرلیغ قضا تبایغ بتخریب کذشت واقعهٔ متهره
مشهور بدیهرهٔ کیشوراي صادر شد و در کم صدتی بسعیٔ بسیار کارپردازان قلع

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[1] In the corresponding passage in the *Maāṣiru-l-Umarā* also. the name is given as اسلام گڑھ عرف راهیری *Bibl. Ind.* text, I, 292, l. 7. Tieffenthaler has "Eslāmghar communément Rápari" (*Description de l'Inde*, Ed., Bernoulli, 1786, Tom. I. p. 459). Rápari (پري ا) is evidently a misreading of راهیری.

[2] Mr Longworth Dames says (Journal, Royal Asiatic Society, 1914) that Jālna also was called Islāmābād, and quotes as his authority the *Chihār Gulshan* (Sarkār, *Loc. cit.* lxxxii and 163). The statement is absolutely unsupported, and may be confidently put down as one of the many errors of a defective text, a careless or ignorant scribe's misreading of چاکنه. Tieffenthaler has 'Eslamabad Tschākla' چاکله for [چاکنه ?]. (*Description de l' Inde*, I, 479). This supposition is rendered practically certain by the fact that the author of the *Chihār Gulshan* elsewhere speaks of Jālna and Islāmābād as quite distinct. The third of the eleven Sarkārs of Ṣūba Aurangābād was 'Jālna,' the fourth 'Islāmābād Konkan' [*i.e.* Chākna]. Sarkār, *op. cit.* 151.

و قمع استوار بنای خذلان از قوة بفعل آمد و بجایش عالی اسامی مسجدی
بصرف مبلغ گران مندزینتِ احداث یافت * * * * اوثان و اصنام خورد
و بزرگ مکلل بجواهر قیمتی که در معبد مشرکان مجمع بیدینان منصوب بود
باکبرابادِ آورده در زیر زینهای مسجد نوابِ قدسیه بیگم صاحب مدفون گردید
که لا یزال پایمال باشند و نامِ مشهور اسلام آباد مسطورِ دفاتر و مذکور
السنه و افواه شد *

Bib. Ind. Text, 95-6.

"And in this same blessed month [Ramaẓān, XIII R.Y., 1080 A.H.] peremptory commands (*lit.* commands sent like those of Fate or Destiny) were issued for the destruction of the idol-temple known as the *Dehra* of Keshavrāi in Mathura, from the portico of the God-knowing Emperor's love of justice and hatred (*lit.* desire to overthrow) of oppression. The subversion and extirpation of that strong edifice of Error was carried out in a short time by the efforts of a large number of workmen, and a mosque of noble proportions (*lit.* foundations) was erected in its place and cost a large (*lit.* heavy) sum..... All the idols and images, small and large, and adorned with precious gems which had been placed in that shrine of polytheists and gathering-spot of infidels were brought to Akbarābād and buried under the steps of the mosque of the Nawāb-i-Qudsiya Begam Sāheb, so that they might be trodden under people's feet till eternity. And the name of Mathura was written in official records and uttered by the tongues and lips (*lit.* mouths) of men as Islāmābād."

It is clear that *if* the order for the destruction of the temple was issued only in Ramaẓān 1080, it must have taken some time to execute it and to build the great mosque which still stands in its place. (Keene, Guide to Āgra, Ed. 1888, p. 95).

If the new name was given in commemoration of that event, it is difficult to see how the coins of 1074 and 1079 can be attributed to Mathura at all. And if they cannot, it is a question whether the other issues of Aurangzeb and his successors may not be supposed to belong to some other place, as "no distinct break in style is noticeable." (P.M.C Introd., xl.)

Mathura eliminated, it remains to discuss the pretensions of Chākna and Chittāgong. Mr. Nelson Wright's suggestion that there must have been "more need for a mint at Chittāgong than either at Mathura or Chākna" is not without weight. It seems to me, however, that the argument against Chākna is much more substantially reinforced by the fact that we have Islāmābād gold muhrs of all the *regular* Emperors from Aurang-

zeb to Shāh ʿĀlam II with only four not unaccountable exceptions (Bahādur Shāh Shāh ʿĀlam I, Jahāndār and the two fainéants Rafīʿu-d-Darajāt and Rafīʿu-d-Daulah).

An examination of the Mughal mint-list shows that gold was rarely or never struck *for long* in any town which did not possess considerable historical, political or commercial importance. Now we possess Islāmābād coins of no less than six reigns out of ten. The total duration of those six reigns is about 141 years; while the aggregate of the other four of which no gold pieces have been found is less than seven. Judging by this standard, Islāmābād must have been a place of, at the least, second-rate importance—a fact which may be predicated of Chittāgong and Mathūra but not of Chākna.

Any claims which Chittāgong might appear to possess are, however, negatived by the fact that it was renamed Islāmābād only in 1076 A.H. The recently discovered coins are of 1074 A.H. and cannot, for that reason, belong to that place. Thus Chākna only is left in possession of the field. It was taken by Shāyasta Khān on the 18th of Zīl-ḥajja 1070 A.H., and named Islāmābād by the Emperor's orders soon afterwards. (*ʿĀlamgīrnāma*, 587-9.) But then, Chākna is not, as I have already pointed out, a place of any great pretensions, and it may also be remembered that the successors of Aurangzeb had scarcely any authority in the district in which Chākna is situated.

The result of this discussion is, that of the four claimants mentioned by Mr. Whitehead, Rāiri has no case at all. The Islāmābād coins of 1074 A.H. are destructive of the pretensions of Mathura as well as Chittāgong, though not of Chākna. At the same time, it is not easy to conceive how gold coins should have been struck during so many reigns in an obscure place like Chākna, and in a part of the country which had long since ceased to belong to the Mughals. This does not of course preclude the possibility of attributing some of the earlier coins to Chākna, and the later ones to Mathūra or Chittāgong. But the difficulty is that we do not know where to draw the line between Chākna and its rivals, and are at the same time not in possession of the evidence which would enable us to pronounce an opinion for or against either of the latter.

S. H. Hodivālā.

Amīrkot.

The mint-name on two dāms in the Indian Museum dated 979 and 989 A.H. (Nos. 371-2) has been deciphered as Amīrkot, and the place supposed to be "Amarkot in Sind, Akbar's birth place."[1] (I.M.C. III, Introd. xxx.) In the notes on

[1] Dr. Codrington's suggestion was probably based on the forms Amercot, Amerkot and Amerkote which occur in Dow, History of

Mānghar and *Kanjī*, I have ventured to draw attention to the necessity and importance of studying the orthographic tradition in regard to Mughal mint-names. I beg permission to point out to-day that the name of the place where Akbar was born is never spelt Amīrkot with an ی. It is always written امرکوٹ or عمرکوٹ Amarkot or Amarkoṭ, by every one of the Mughal chroniclers whose works are cited below. (Badāōnī. *Muntakhabu-t-Tawārīkh*, Bibl. Ind. Text, I, p. 440, l. 9; p. 442, l. 2; *Ṭabaqāt-i-Akbarī*, Lakhnau Lithograph, p. 206, l. 11; p. 207, ll. 8, 13; Abūl Faẓl, *Āīn*. Bibl. Ind. Text, I, p. 508, l. 2; p. 557, l. 10; p. 558; Col. 2, l. 3; II, p. 32; Col. 2, l. 7; *Akbarnāma*, Ibid. I, p. 18, l. 19; p. 23, l. 6; p. 45, l. 16; p. 182, l. 3; p. 184, l. 25; III, p. 602, l. 9; p. 605, l. 22; p. 608, l. 15; Iqbālnāma, 274, l. 13; 'Abdul Ḥamīd Lahorī, *Bādishāh-nāma*, Ibid. I, i, p. 66, l. 10; Khāfī Khān. *Muntakhabu-l-Lubāb*, Ibid. I, p. 127, l. 5; *Maāṣiru-l-Umarā*, Ibid. I, p. 467, l 6; p. 711, l. 14; p. 829, l. 4; II, p. 387, l. 7; III, p. 312, l. 5.)

The local pronunciation appears to be 'Umarkot or Amarkot (J.A.S.B., 1886, Pt. i, 83-84). "The town of *Umarkot*," writes the compiler of the Imperial Gazetteer, "is said to have been founded by one Umar, a chief of the Sumra tribe. but at what date is not known"[1] (XXIV, 118). The name of the eponymous founder is always spelt by the Musalmān author of a provincial history called the *Tārīkh-i-Ṭāhirī* with an *'ain* (ع), and in allusion to his supposed namesake the Khalifa 'Umar, he is repeatedly spoken of as "this chieftain unworthy of his sacred name," or as "that tyrant misnamed 'Umar." (E.D.I., 260, 263 and notes). For the same reason and under the influence of the popular etymology, the name of the town is written عُمر کوٹ by him and by the anonymous author of the *Beglārnāma*[2] (*Ibid.* 260, 292, 296, 297, 299).

Hindostan (Ed. 1812), II, 137, Hamilton, East India Gazetteer (1815), p. 27, Stewart, Memoirs of Humāyūn (1832), 38, 42, 44, 45 and Erskine. History of Bāber and Humāyūn (1854), II, 254, 255. But Anglo-Indian transliteration was in those days most lawless and erratic. Briggs (Translation of Firishta, Reprint, II, 95) has Amurkote, Malet (History of Sind, 1855, p. 118), Omurkote, Forbes (Rās Mālā, 1856), Oomurkot (Reprint 1878, p. 227), and Thornton (Gazetteer, New Edition, pp. 720, 728), Omercote, or Oomerkote.

[1] The statement occurs in almost the same words in A. W. Hughes, Gazetteer of the Province of Sindh (1874), p. 843.

Captain Macmurdo writes that "Amercote was built by a Soomra upon the ruins of a Sodha independency, and repossessed by the same tribe." Account of the Province of Cutch, etc., in Transactions of the Literary Society of Bombay (Reprint 1876), Vol. II, 251.

[2] The author of the *Tarīkh-i-Ṭāhirī* makes 'Umar Sumra a contemporary of 'Alāuddīn Khiljī who is said to have conquered his country and taken him prisoner, Elliot and Dowson, I, 265-6. Akbar's aunt, the

On the other hand, Hamilton (Description of Hindostan, ed. 1820, I, 554) says that the name signifies "Fort of the Immortals." (Sanskrit *Amara*-deathless. immortal). *Amara* (or *Amar*) is a by no means uncommon element in the Hindū names of persons and places, *e.g.* Amarsinh, Amarchand, Amarapūra, Amarāvati, Amarpattan, Amarkantak, Amargarh, Amarnāth, etc.

Whatever may be thought of either of these derivations, it is certain that Amīrkot has no authority in its favour. I venture to suggest that the identification and, perhaps the *reading* also, stand in need of reconsideration. One of the two specimens in the Indian Museum is figured on Pl. IV. (I.M.C. No. 371). I must confess my inability to discern the 'alif' anywhere on the obverse, and Mr. C. J. Brown informs me that the letter is not visible on the specimen in his possession. Perhaps we may have to go back to the old reading Sherkot.[1] In his Summary of the Imperial Rent-Roll. Abūl Faẓl mentions Sherkot as the chief town of a *maḥāl* or *pargana* in the Sarkār of Sambhal. Its Revenue was 4,921,051 dāms. (Jarrett, Āīn, Trans. II, 105, 290, *Bibl. Ind.* Text, I. 370, 523). Sherkot is now in the Dhāmpūr taḥsīl of Bijnor district, United Provinces. Lat. 29° 20′ N., Long. 78° 35′ E. (Imperial Gazetteer, *s. n.*).

S. H. Hodivālā.

Bangāla.

The mint-name Bangāla was first read by Mr. Rodgers on some couplet-rupees dated 1009 and 1010 A.H. (L.M.C., p. 245). The suggestion was not at first universally accepted, and Mr. Nelson Wright relegated it to a footnote in the I.M.C. (III. p. 35.) The publication by Major Vost of several other specimens in Num. Sup. XI determined the reading, but the situation of the mint is still far from certain. Major Vost identified it with Gaur on the ground that "in the Memoirs of Bāyazīd Biyāt we have an account of Mun'im Khān's removing the headquarters from Tānda to Gaur (which Bāyazīd also calls Bangāla) and of the pestilence which broke out there. (See Mr. Beveridge's article, J.A.S.B. 1898, p. 315)." N.S. XI, p. 320.

I am afraid the matter is not so easily disposed of. The

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princess Gulbadan, also writes the name عمر كوت in her *Humāyūn-Nāma*, Ed. A. S. Beveridge, Text, p. 58, l. 9; p. 59, ll. 1, 18.

[1] "Under date February 1905, Mr. Bleazby writes me of his having acquired coins from two mints not yet registered, a muhr from Hajīpūr (حاجي پور), and a *dām* from Sherkot شير كوٹ. Both these coins were issued in the reign of Akbar I." Dr. Taylor in Journal of the Bombay Branch, Royal Asiatic Society, Centenary Memorial Volume, 42f.

work of Bāyazīd has not been published, and it is impossible to say how the statement about Gaur being 'also called Bangāla' is worded in Persian. But supposing that the rendering quoted from Mr. Beveridge's abstract or paraphrase is faithful to the original, the identity of the *mint-town* Bangāla with Gaur does not *necessarily* follow.

It is common knowledge that Lakhnautī or Gaur had been the capital of Bengal during the supremacy of the Dehlī Sulṭāns, and it is not improbable that it was, *on that account*, called Bangāla in those times, though *historical evidence on the subject is wanting*. It may even be that it was spoken of as 'Bangāla' (or 'Gaur-Bangāla') when Mun'im Khān removed the headquarters from Tānda to Gaur, *i.e.* when it once more became, for a time, the seat of government. But it is certain that Gaur had fallen from its high estate long before, and that it did not occupy any such position *during the period* to which the known Rupees of Bangāla belong (XXXIX R-1011 A.H.). This fact would, in itself, be a fairly good reason for reserving judgment, even if there were no other grounds for doing so. The subject evidently calls for further inquiry. It may be therefore permissible to set out and discuss the historical and geographical evidence so far as it is known to me.

The conjoint name گور بنگاله occurs four times in the Princess Gulbadan's account of her brother Humāyūn's disastrous campaign in Bengal.

"His Majesty was considering this, when the King of *Gaur Bangāla* came wounded and a fugitive. For this reason he gave no attention (to Shīr Khān), but marched toward *Gaur Bangāla*. Shīr Khān knew that His Majesty had gone there [بگور بنگاله in the original], and went himself also with a large detachment of horse [بگور رفت in the text], and joined his son (Jilāl Khān) who was in Gaur with his servant Khawāṣ Khān. Shīr Khān sent them out, and said, 'Go and fortify Garhī.'" *Humāyūn Nāma*, Tr. A. S. Beveridge, p. 133.

"He [Humāyūn] marched forward, and when he came near Garhī, Shīr Khān and Khawāṣ Khān fled by night, and he entered Garhī next day. Thence he went to *Gaur-Bangāla* and took it [گور را گرفتند in the text]. He was nine months in the far away country of Gaur, and named it Jannatabād. He was comfortably and safely in Gaur when news came that some of the Amīrs had deserted and joined Mīrzā Hīndāl." *Ibid.* 134.

"He [Humāyūn] took notice of this insignificant one [*i.e.* herself], and was kindly pleased to say: 'I did not know you at first, because when I led the army (whose footprints are victorious) to *Gaur-Bangāla*, you wore the high cap (*ṭāq*), and

now when I saw the muslin coif I did not recognise you." *Ibid.* p. 138.[1]

It will be observed that *Gaur* is spoken of here as if it were a country (ولايت),[2] and also as a city, and it is besides not at all easy to say whether گور بنگاله or گور بنگاله (with the *iẓāfat*) signifies 'Gaur (the country or city) which is *also called* Bangāla' or 'Gaur (the city) which is [situated] *in* Bangāla'.

Double names of this type are of frequent occurrence in the Persian historians, but their true import is often far from clear, and they are likely to mislead the unwary. The first name is often only an eponymous equivalent or *alias* of the second; some times the second name stands merely for the larger tract or country in which the first is included; in other instances again, it is the designation of some place in its vicinity which is coupled with it in order to distinguish it from other homonymous localities.

Fatḥpūr-Sikrī, Fatḥābād-Dhārūr, Pattan-Nahrwāla, Mu'aẓẓamābād-Gorakpūr, 'Aẓīmābād-Patna belong to the first class;

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[1] 'Gaur Bangāla' and 'Gaur' are so mixed up in the first two passages that it might be as well to cite the very words of the authoress.

درین فکر بودند که پادشاه گور بنگاله زخمي شده گریخته پیش حضرت آمد و بدان حضرت مقید نشدند و کوچ کرده متوجه گور بنگاله شدند شیر خان دانست که پادشاه بگور بنگاله شدند خود هم جریده ایلغار کرده بگور رفت و همراه پسر خود یکجا شد پسر او و خواص خان غلام او در گور بودند خواص خان و پسر خود را فرستاد که بروید و گرهي را مضبوط کنید

Text, pp. 39-40.

چون کوچ کرده پیشتر رفته نزدیک گرهي فرود آمدند شب شیر خان و خواص خان گریختند فردا آنحضرت به گرهي در آمدند و از گرهي گذشته به گور بنگاله فتند و گور را گرفتند تا نه ماه در ولایت گور بودند و گور را جنت آباد نام کردند باز بدولت در گور بودند که خبر رسید که امرا گریخته بمیرزا هندال ملحق شدند *

Text, p. 40.

[2] Gaur was the name of the *town* as well as of the *province*. "The name is a form of the ancient *Gauda*, meaning, it is believed, 'the country of sugar,' a name applied *to a large part of Bengal*, and specifically to the portion where the remains [of Gaur] lie." Yule and Burnell, Hobson-Jobson, ed. Crooke, p. 390. So, Lakhnautī was the name of the *town*, but Musalmān writers frequently speak of it also as ولایتِ لکهنوتي, the *Country* of Lakhnauti. *Ibid.*, 85. See also Thomas, Chronicles, 107-8, note.

but Fatḥābād-Dakan (‘*Ālamgirnāma*, 565, l. 9), Pattān-Gujrāt (Beveridge, *Akbarnāma*, Tr. III., 231, 267), Mu‘azzamābād-Awadh (*Maāṣir-i-‘Ālamgīrī*, 470), Qandahār-Dakan (‘*Alamgīr-nāma*, 566), Dewal-Sind (E.D.I., 375, Hobson-Jobson, 320), Rājmaḥal-Baugāla (Khāfī Khān, I. 468), Bālāpūr-Birār (Khāfī Khān, I. 282) are examples of the second ; and lastly, Fatḥpūr-Hānswa (A. S. Beveridge, Memoirs of Bābur, 651*n*), Firozpūr-Jhirka (*Ibid.* 580 n), Hājīpūr-Patna (Khāfī Khān, I. 183), Karrah-Mānikpūr (A. S. Beveridge, Mem. of Bābur, 544), Gujarāt-Lāhor (Khāfī Khān, I. 252), and Pattan-Aḥmadābād (*Ibid.*, I., 176) belong to the third.

In these circumstances, a superficial inquirer or casual visitor from foreign parts is exceedingly liable, on hearing the compound name, to carry away erroneous notions as to the real significance of the duplication, and we have ourselves to exercise some caution in accepting statements emanating from such a source. The conjoint name ‘Gaur-Bangāla’ does appear at first sight to mean ‘Gaur which is identical with Bangāla,’ but then Abūl Faẓl gives the latitude and longitude of پنڈوا بنگالہ, and Jarrett understands him to refer, no doubt, correctly, to ‘Panduā *in* Bengal’.[1] (*Aīn.* Tr. III., 59). Similarly, Khāfī Khān speaks in one place of ‘Rājmaḥal-Bangāla’ (I. 468). It is obvious that Gaur as well as Panduā and Rājmaḥal could not all have been denominated ‘Bangāla,’ and it is clear that ‘Gaur-Bangala’ implied, *at times*, nothing more than that Gaur was situated in the country or province of Bengal.[2]

The matter is the more perplexing owing to the fact that several European travellers of the 16th and 17th centuries speak of a ‘*City* of Bengala’.[3] Duarte Barbosa (*c.* 1516 A.C.) tells us that at the head of the Gulf of Bengala was situated

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[1] In the very next line, the Bibliotheca Indica text has لکھنوئي نیک, (II. 33, col. a, l. 2). Jarrett (*Āīn.* Trans. III. 59) points out that نیک is a misreading of بنگ and translates, ‘Lakhnauti in Bengal.’ I need scarcely add that لکھنوتی is the same as گور and بنگ is synonymous with لنگالہ Thus we have پنڈوا بنگالہ ‘Pandua Bangāla’ in one line, and بکھنوتي بنگ ‘Lakhnauti Bang,’ *i.e.* ‘Lakhnauti Bangāla’ (otherwise ‘Gaur-Bangāla’) in the next. The only consistent interpretation would seem to be, not that Pandua and Lakhnauti (otherwise Gaur) were both called Bangāla, but that the author was speaking of the towns so called which were *in* Bangāla.

[2] So Blochmann writes: “In official documents, Bengal is often mentioned under the title of *Jannat-ul-Bilād*, or the Paradise of countries; and Lak'hnauti was called *Jannatābād-i-Bangālah* or Paradise town, in opposition to Jalnāpūr in the Dak'hin, which was called *Jannatābād-i-Dak'hin.*” Notes on Places of Historical Interest in the District of Hugli, Proceedings, Asiatic Society of Bengal, 1870, p. 110 and note.

[3] I was at one time not a little puzzled by Mr. Lane Poole's state-

"a very great city inhabited by Moors," which was called 'Bengala' and had a very good harbour. (Hakluyt Society's Edition, 178). Ludovico Varthema (1503-1508 A.C.) informs us that this 'Bengala' was seven hundred miles distant from Tarnassari [Tenasserim]. It was one of the best cities he had seen, and its Sulṭān was a Moor who maintained 'two hundred thousand men for battle on foot and on horse,' who were all Muḥammadans. (Ed. Badger, Hakl. Soc., 210-1). A 'city of Bengāla' is also mentioned by Purchas who writes: "The Kingdom of Bengala is very large, and hath of coast one hundred and twentie leagues, and as much within land.....Gauro the seat royall and Bengala are fair cities. Of this the Gulfe, sometimes called Gangeticus, now beareth name *Golfo di Bengala*. Chatigam is also reckoned amongst these cities." (Voyages, V. 508). There is a reference to the city in Mandelslo also, though he himself was never in those parts himself. "En tirant vers le septentrional on trouve le royaume de Bengala, qui donne le nom au golfe que les anciens appellent *Sinus Gangeticus*.....On trouve plusieurs belles villes dans ce royaume, comme sont celles de *Gouro*, d' Ougeley, de Chatigan, de *Bengala*, de Tanda, de Daca, de Patana, de Banares, d' Elabas, et de Rajmehala." Voyages, p. 290, *apud* Badger, *loc. cit.*, 211 note).[1] Fryer (1672-1681),

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ment that Dhākka was 'originally' called 'Bengalah' (B.M.C. Introd. liv). On turning for light to the authority cited (Arch. Survey, XV. 127), I found that it was grounded on nothing more than Cunningham's endorsement of Taylor's conjectural identification of this 'City of Bengala.' As Mr. Lane Poole's authority is deservedly high, and the Arch. Surv. Reports are not always accessible, Cunningham's own words are given below: "He [J. Taylor] thinks, apparently with good reason, that it [Dhākka] may be 'the city of Bengāla' mentioned by European travellers of the sixteenth and seventeenth centuries. What tends to confirm this opinion of the identity of Dhākka and Bengala is, he says, the circumstance that 'only one of them is mentioned by the same traveller. Methold in enumerating the principal cities of Bengal, for instance, mentions Rajmahal and Bengalla which he designates fair cities, while Herbert and Mandelslo who travelled about the same period specify Dhakka and Rajmahal, but make no mention of Bengala.' Topography and Statistics of Dacca, p. 92."

[1] Badger's quotation is from A. de Wicquefort's much-doctored version. The passage is differently worded in the *English* translation of John Davies (Second Edition. 1669), and there is no mention in it of the city or town of Bengala. All that I can find there is cited below: "Next to Orixa, winding towards the North, lyes the Kingdom of Bengala, which gives name to the Gulph, by the ancients called Sinus Gangeticus..... The Province of Bengala may no doubt be numbered amongst the most powerful of all the country, giving its name to the Gulf, into which the Ganges disembogues itself by four several channels, or mouths. Its principal cities are Raymehel, Kaka or Dacca, Philipatan and Satigam." Voyages and Travels, 2nd Edition (1669), pp. 94 and 16. Mr. Vincent Smith has recently shown that Mandelslo's work is "a faked book which has for long enjoyed an estimation wholly undeserved." J.R.A.S., 1915, pp. 245-254.

again, informs us in his account of the Madras factory, that the English East India Company's agent there was "Superintendent over all the Factories on the Coast of Coromandel, as far as the Bay of Bengala, and up Huygly River (which is one of the Falls of Ganges), *viz.* Fort St. George *alias* Maderas, Pettipolee, Mechlapatan. Gundore, Medapollon, Balisore, *Bengala*, Huygly, Castle Buzzar, Pattanaw." (A New Account of East India and Persia, Ed. 1698, p. 38.) Ovington too mentions 'a city of Bengala' though he does not vouch for its existence himself: "Arracan is bounded on the North-West by the Kingdom of *Bengala*, some Authors making *Chatigam* to be its Frontier-City; but *Teixeira*, and generally the *Portuguese* writers, reckon that as a City of Bengala; and not only so, but place the City of Bengala itself .... more South than Chatigam. Tho' I confess a late French Geographer has put *Bengala* into his Catalogue of imaginary Cities." (A Voyage to Suratt in the year 1689, Ed. 1696, p. 554).

This is not all. A 'City of Bengala' is marked "in most of the early Maps of Asia and of India," and Dr Badger gives in the Introduction to his Translation of Varthema's Travels, a list of no less than sixteen maps in which 'Bengala' and Chātigām (Chittāgong) are *both* marked. The earliest of these examples of European cartography—the Map of Gastaldi—is dated 1561 A.C. The latest bears the name of Ottens and was published at Amsterdam in 1740 A.C. In all except one of these old charts, Bengāla is located "either on the north-east, due east, or south-east of Chatigam." In Gastaldi's Map—the exception—the two places are transposed and Chātigām is on the south-east of Bengāla. The discrepancy adds to the difficulty of precisely fixing the real situation of the city. It is, however, more relevant to note that in this map of Gastaldi's, Gaur and Bengāla are *both* shown, and are quite distinct. (Badger, *loc. cit.* Introd. cxiv-cxxi.) Similarly, in the Map of *India Orientalis* attached to Patavino's Geography (1597 A.C.), Bengāla is marked "as a town situated at the head of the Gulf on the right bank of the eastern bank of the Ganges" (*Ibid.*, cxix), and is "described as distinct from either Gour or Chittagong, or Satgong" (*Ibid.* lxxx). Mr H. Beveridge also has called attention to the fact that in one of the three maps of India made by Ignazio Danti to illustrate Ptolemy's Geography in 1575, 'Gour, Bengāla, Rhotasgarh, Satgaon' are *all* marked. (Journal, Royal Asiatic Society, 1903, p. 577.)[1] It will be observed that Purchas and

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[1] It is not in old European maps or charts only that a city called Bengāla is shown. It is found also in a quarter where no one would have ever thought of looking for it. An astrolabe made in Lāhor by Ḥāmid ibn Muḥammad Muqīm ibn 'Isā ibn Allahdād in 1087 A H. (1677 A.C.) was purchased at Ilahābād for the Museum of the Asiatic Society of Bengal, and described by the late Dr. Hoernle in its Proceedings for April 1890. "On the interior face of the main piece were engraved two sets of

Mandelslo also speak of *both* Gouro and *Bengāla*, and distinctly imply that they were not identical. All this is not very illuminating, and it is not easy to say where this 'alleged city of Bengāla' was, but it is fairly clear, if any reliance is to be placed on these statements, that *it was not Gaur*.

I may say at once that I do not lay much stress on the point myself, but it is not impossible that others may be inclined to take a different view. The old European maps are not very accurate or reliable, and the European travellers of those days often betray gross ignorance of the facts of Indian geography. It may be, therefore, worthwhile to adduce another piece of evidence which bears in the same direction without being open to the same objections.

There is in a vaulted chamber, originally built by the orders of Bābur on a rock near Qandahār, a long Persian inscription containing a description of the boundaries of Akbar's Empire, and a list of the cities and towns comprised in it. It was composed and written out by the poet and historian, Mīr Muḥammad M'aṣūm, and carved and executed under his own eye in 1007 A.H.[1] The entire record was edited and translated

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three concentric circles. The middlemost circle of each set was inscribed with the names of the best known towns of India, Persia, and Arabia; the outer and inner circles of each set gave the longitudes and latitudes of each town. The series of names of the outer set commenced....with Mecca, Medīnah, Ṭaīf, Jadah, etc., and concluded with Lahāwar, Dehlī, Agra, Benares. The series of the inner set contained only Indian names, commencing with Daulatābād, Ahmadnagar, and ending with Sonārgāon, *Bangālah*, Pānīpath (*sic*)." Proceedings, A.S.B., 1890, pp. 148-9.

It is not easy to say where this 'City of Bengāla' really was, or if it existed at all. Badger, after abandoning the identification with Gaur, came to the conclusion that it "occupied a position between the Hattia and Sundeep islands, situated at the present mouth of the Brahmaputra" (*Loc. cit.* cxxi). Yule was sure it was Chātigām or Chittāgong. (Hobson-Jobson. ed. Crooke, 85.) Rennell believed that it had been "carried away by the river" (Memoir, ed. 1788, p. 57). Blochmann was inclined to think that "no such town ever existed." J.A.S.B., 1873, p. 233.

More recently, the Rev. H. Hosten has pronounced that "the term [*scil.* City of Bengāla] has been used for a variety of places: Sonārgaon, Sātgāon, Chittāgong, and even such places as Hūglī and Chandernagar: that, in fact, it applied to *the chief port at the time.*" The Twelve Bhūiyās of Bengal, in J.A.S.B., 1913, p. 444. He scouts the idea of the city having been carried away by the river or of its having never existed.

[1] M'aṣūm himself thus refers to it in the chapter on the 'Wonders of Kandahar.' "Another curiosity is, that by the order of Babur Badshah, at a hill called Seepoozah, the rock was cut, and a recess made, which he called Peshtag..... In the inscription in this recess are written the names of Mahomed Babur Badshah, Meerza Kamran, Meerza Uskuree, Meerza Hundal..... But Hoomayoon Badshah, not being of the kings there, his name was not written..... When I went there, seeing that the names of Hoomayoon and Ukbar Shah and their countries, were not mentioned,....it came into my heart to write the names of their countries and cities. For this purpose, I called from Bukkur good writers and stone-cutters, who wrote the names of Hoomayoon Badshah and Huzrut Shahun Shah Ukbar, and also of their countries and cities, from

with an interesting commentary by James Darmesteter in the *Journal Asiatique* for *Février-Mars*, 1890 (pp. 195-230), and some of its obscurities and difficulties were further elucidated by Mr. Beames in his article on the 'Geography of the Qandahār Inscription' in J.R.A.S., 1898 (pp. 795-802).[1] In this contemporary epigraph, we have,—if the eye-copy made for Darmesteter by Mirzā Muḥammad Taqī can be relied on—

گورو بنگاله as if they were separate places.

We read :—

چون اقبال و دولت شاهنشاهي اکثر اقليم ربع مسکون را که طول آن از حدود سراندیب و ادیسه و بند[ر] کوراکات و گور و بنگاله تا تته و بندر لاهري و هرمز که مسافت آن قریب دوساله راه مي شود و عرض آن از کابل و کشمیر تا سرحد دکن و برار که قریب بکنیم ساله راه باشد مسخر گردانید *

Journal Asiatique, 1890, p. 205.

M. Darmesteter's translation of this is as follows :—

"Mais la fortune et la prospérité de l'Empereur reduisirent la plupart des pays formant le quart habité de la terre sur une longueur qui s'étend des limites de Serandip, Adīsa, [*rect.* Udīsa, i.e. Orissa] et Bandakura, Kāt, [*rect.* Bandar-i-Gorāgāt], *Gor et Bengāla* jusqu'à Tatta, Bandar Lāharī et Hormuz, distance qui est á peu près de deux années de marche ; et sur un largeur qui va de Kābul et Kashmīr jusqu'à l'extrémité du Dekan et de Berār, ce qui fait à peu près une demi-année de marche." (*Ibid.*, 219-220.)

Lakhnauti or Gaur had been the capital of Bengal in Hindū times as well as during the period in which it was ruled by Viceroys of the Dehlī Sulṭāns. Shamsu-ud-dīn Iliyās Shāh removed the headquarters to Firūzābād or Pandua, 20 miles distant, about 1353 A.C. Jalāl-ud-dīn Muḥammad Shāh reverted to Gaur about seventy years later. "After the conquest of Bengal by Sher Shāh in 1539, the seat of government was again removed to Tāurā or Tāndā, a few miles south-west of Gaur ....., and shortly afterwards, Gaur was depopulated by pestilence, when Munim Khān after defeating Dāūd Shāh.... proceeded here with his army during the rainy season of 1575 Bengal to Lukhee Bunder (Tatta) and from Kabool and Ghuznee to the south. **In four years this was finished**, and it certainly was well executed, and many went to see it." A History of Sind. Trans. G. G. Malet, p. 89. The passage is also translated in Elliot and Dowson, I, 238-9. The original text will be found in Darmesteter, *loc. cit.* 226-7 note.

[1] There is an older transcript and translation of the inscription in Mohan Lal's "Journal of a Tour through the Panjab, Afghanistan, Turkistan, Khorasan and part of Persia," printed at Calcutta in 1834. It is full of errors and 'fantaisies de la lecture,' but is not unuseful. There is also a brief notice of the record in Bellew's "Journal of a Political Mission to Afghanistan in 1857," p. 233.

..... *The few people that survived left the city*; ..... *Gaur was never again populated to any extent*, although various additions were made to its buildings from time to time, such as the Lukachūri or eastern gate of the fort, which was erected by Sulṭān Shujā in 1650." (Imp. Gaz., XII, 186-7.) Elsewhere, we are told that "according to Stewart, (History of Bengal, ed. 1847, p. 95), Sulaimān Shāh Kararāni.....removed the seat of government to Tándā in 1564, eleven years before the *final depopulation* of *Gaur*." (*Ibid.*, XXIII, 221.) [1]

We also read that "*after his return from the conquest of Orissā in* 1592, Mān Singh, Akbar's Rājpūt general, selected Rājmahāl, formerly Āgmahāl, as the capital of Bengal, on account of its central position with respect to that province and to Bihār; and because it commanded the Ganges and the pass of Teliagarhi." (*Ibid.*, XXI, 78.)

Turning to the *Maāṣiru-l-Umarā*, we find its author saying that Mān Singh invaded the kingdom of Orissa *in the thirty-seventh year of the reign*, and besieged Sāranggadh (a stronghold near Katak) to which the Rājā had retired. The Rāja submitted and the province was annexed to the empire in A.H. 1000. The author then goes on to say that *in the 39th year*, 1002 *A.H.*, Mān Singh was sent to govern Bengal and

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[1] It should be noted that Tānda and not Gaur was the capital of Bengal even *when* Mun'im Khān *first* took charge of the province. Abūl Faẓl says that "*he made habitable* the city of Gaur which formerly was the capital," for this reason "that the army might be near Ghorāghāt which was a fountain of sedition, and might entirely put down commotion there, and also that he might restore this delightful place which had a noble fort and magnificent buildings. He did not notice that the atmosphere of the place had acquired poisonous qualities in consequence of the vicissitudes of time and of the decay of buildings, especially at the time of the end of the rains." Beveridge, *Akbarnāma*, Trans. III, 226. Niẓāmuddīn Ahmad informs us that "the air of Gaur was extremely unhealthy, and *in former times*, the many disasters which distressed its inhabitants induced the rulers to abandon the place, and raise the town of Tānda." Elliot and Dowson, V, 395. See also Badāonī, Trans. Lowe, II, 220. A local historian, Sayyad Ilāhī Bakhsh Ingrezābādī, says that after the plague of 983 A.H. "the city became deserted, and became a jungle in the space of a year." H. Beveridge's Summary of the *Khūrshīd-i-Jahān-numā* in J.A.S.B. 1895, p. 216.

It may be also noted that after this "final depopulation" of 1575 A.C., Gaur is not at all mentioned in the *Akbarnāma*, and is incidentally referred to but once in the histories of Niẓāmuddīn Ahmad (Lakhnau Lithograph, 345; Elliot and Dowson, V, 415) and Badāonī, (*Bibl. Ind.* Text, II, 280; Lowe II, 289).

Similarly, the name of Tānda which is of frequent occurrence in the third and fourth decades of Akbar's reign, is not afterwards heard of. The latest reference (*Akbarnāma*, Bibl. Ind. Text, III, 667) relates to the 40th year. I have not come across it in any of the authorities for the reigns of Jahāngīr and Shāh Jahān, and it crops up again, and then only for a time, in the account of Mīr Jumla's campaign against Aurangzeb's brother, Shāh Shujā'a. (*'Ālamgīrnāma*, 461, 476, 483, 553; 557; *Maāṣir-i-'Ālamgīrí*, 26, 29; Khāfī Khān, II, 98, 99).

made Atāliq (Guardian or Protector) of his nephew, Prince Khusrū.

و نزد آک محل جاي پسنديد که آسيب کشتي بدو کمتر رسد - شير شاه نيز اين مکان را خوش کرده بود - بلدهٔ حاکم نشين اساس گذاشته باکبر نگر موسوم ساخت - راج محل نيز نامند *

Bibl. Ind. Text, II, 166, ll. 11-13.

"And having selected a spot near Āgmaḥal which was free from the inroads (*lit.* dangers) of ships (*i.e.*, pirates) and which Sher Shāh also had been pleased with [خوش کرده pleasant, agreeable, *Steingass*], he founded there a Capital (*lit.* a city which was the seat of the governor) and named it Akbarnagar. It is also called Rājmaḥal."

The sources of the *Maāṣir* are always excellent and these lines are, as a matter of fact, copied textually with the omission of a few redundant words and phrases from Abūl Faẓl's *Akbarnāma* (*Bib. Ind.* Text, III, 697, ll. 7-11).[1]

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[1] Abūl Faẓl writes in his account of the 40th year :—

درين روز اکبرنگر اساس يافت چون راجه مانسنگهه به بنگاله درشد از دور بيني حاکم نشين جائ بر انديشيد که آسيب کشتي بدو نرسد پس از فراوان پژوهش نزد آک محل گزيده جائ بدست افتاد همانا شير خان نيز آنرا خوش کرده بود بفرخ ساعتي بنياد نهاد و در کمتر زماني گزين شهري آباد گرديد و بدان نام فرخي بر گرفت *

Text, III, 697.

"*About this time* (*lit.* in these days) Akbarnagar was founded. When Rāja Mānsingh went to Bangāla, he had the foresight to think of [establishing] a capital which would be free from the inroads (*lit.* dangers) of ships (*i.e.* pirates), and with great wisdom secured an excellent site near Akmaḥal which Shīrkẖān also had chosen (or been pleased with). The foundations were laid in an auspicious hour and in a short time, a fine city arose (*lit.* was peopled, inhabited) and acquired glory from that name."

Mr. Stanley Lane Poole says (B.M.C. Introd., liv) that it was Jahāngīr who "named Akbarnagar (Rājmahall) after his father," and Mr. Vincent Smith has recently lent the weight of his authority to the same statement (Akbar, p. 145, note), which is shown by the above quotation to be demonstrably erroneous.

It may be perhaps worth noting that Akbarnagar was not *founded*. according to Abūl Faẓl, *in* the 40th year. All that he really says is that the new capital was established '*about the time*, or *in those days*' (درين روز) when Rāja Mān Singh went to Bangāla.

Rāja Mān Singh's appointment as Governor of Bangāla was made on 7th Fravardīn of the 39th year. (*Akbarnāma*, Bibl. Ind. Text, III, 650), ll. 6-7).

It is worthy of consideration whether we have not in the Mint-name *Bangāla* an example of the custom of calling the town which *happened to be the capital at the time*, by the name of the country, and whether the rupees under discussion were not struck, in the newly-founded capital of Akbarnagar, instead of the deserted and depopulated Gaur.[1]

It may be perhaps necessary to say that the chief city or capital of a province or country was, even in comparatively recent times, loosely designated by the same name as the latter, though the real or specific name of the city was different.

Thus Abūl Faẓl speaks of 'Gujarāt' when he means, as Mr. Beveridge points out, 'Aḥmadābad, the capital.' (*Akbarnāma*, Tr. III, 66; Text, III, 47, l. 3.) The Emperor Jahāngīr also writes that "trustworthy men divided" a large sum of money which he had set apart for distribution to the poor and necessitous for the repose of the soul of his father, "among the twelve chief *cities*, such as Āgra, Delhi, Lāhor, *Gujarāt*, etc." There can be no doubt that 'Gujarāt' here means Aḥmadābād (*Tūzuk-i-Jahāngīrī*, ed. Sayyad Aḥmad Khān, 1864, p. 61, l. 9; Rogers and Beveridge, Tr. I, 128.) Elsewhere, he informs us that a eunuch named Wafādār "entered Aḥmadābād and took possession of the *city of Gujarāt*."

باحمد اباد در آمده شهر گجرات را متصرف گشت *

(*Tūzuk*, Text, 362, ll. 10-11; Trans., II, 262). The author of the '*Ālamgīrnāma* twice speaks of 'Gujarāt' as if it were a city. (Text, 411, ll. 8-9 and 775, ll. 2-5.) Tieffenthaler also describes the village of Sarkhej near Aḥmadābād, and its tomb of Shaikh Ahmad Khattū in the following words: "A 3 milles de *Guzarate* se trouve Sarkés, village où est le mausolée construit à grands frais par Gans (*sic*) Ahmad Roī du Guzarate." (Description de L' Inde, I, 377.) Manucci, too, has 'city of Gujarāt' (Irvine, Tr. *Storia*, IV, 271.). It is scarcely necessary to do more than refer to the parallel case of Srīnagar, which is, throughout the Mughal period, more frequently spoken as 'city of Kashmīr' or 'Kashmīr' only than by its true designation.[2]

[1] I may also note, *for what it is worth*, the fact that the double name اکبر نگر بنگالہ occurs once in the *Maāṣiru-l-Umarā* I, 664, l. 2.

[2] Abūl Faẓl writes in one place of Sīstān as if it were a *city*, and Bāyazid Biyāt leaves no doubt as to his meaning by speaking, as Mr. Beveridge points out in a note, of the *Qaṣba-i-Sīstān*, 'the *town* of Sīstān.' *Akbarnāma*, Trans. I, 415, and note. Raverty explains that "Zaranj was the capital city of the territory called Sijistān by the Arabs,....and the name of 'city of Sīstān' or 'Sijistan,' applied to that city, is after the same fashion as styling Urganj, Khwārizm." *Ṭabaqāt-i-Nāṣirī*, Trans., 1123, note.

The geographical expression Bangāla occurs about a hundred and sixty times in the works of Abūl Faẓl, and as a rule, it is used only for the province. But in two passages, at least, it is clearly meant, not for an extensive tract of country, but some particular city. "In the beginning of this reign," writes the historian in the *Āin*, "gold was coined to the glory of his Majesty in many parts of the empire; *now* gold coins are struck at four places only, *viz.* at the seat of the government, in *Bengal* [بنگالہ], Aḥmadābād (Gujarāt), and Kābul." (Blochmann's Translation, I, 31.) The second passage occurs in the *Akbarnāma* record of the events of the 22nd year. "The mints of the imperial dominions," he says, "which had been under the charge of *Chaudharīs* were divided. The directorship of this weighty business was assigned to Khwāja 'Abdu-ṣ-Ṣamad Shīrīnqalam in Fatḥpūr, the capital of the empire. The mint at Lāhore was assigned to Moẓaffar K[hān], that in *Bengal* to Rājah Todar Mal, that in Jaunpūr to Khwaja Shāh Manṣūr, and that in *Gujarāt* to Khwāja 'Imādu-d-dīn Ḥusain, that in Patna to Āṣaf K[hān]." (Beveridge's Trans., III, 321.) Mr. Beveridge notes that "here and at B[lochmann] 31, the word Bengal (Bengāla) is used as if it was the name of a city. Perhaps Gaur is meant, for Tāndā is separately mentioned at B[lochmann] 31." (*Ibid.*, note.)

I beg to say that this is not beyond dispute. It is not impossible that Tānda may be meant and not Gaur. The former is repeatedly spoken of by Abūl Faẓl himself *during this period* XIX R.Y. to XXXIX R.Y.) as 'the capital of the country', دار الملک آن دیار (*Akbarnāma*, Text, III, 182, Trans., III, 255), or as the 'centre of Bengāla' (مرکز بنگالہ), *Ibid.*, Text, 109; Trans., III, 153, or as 'Tānda the capital,' دار الملک تاندہ, Text, III, 109, 291, 299, 420, 439, 440, 460; Trans., III, 153, 428, 442, 625, 660, 695). It is undeniable that, in the 22nd year, Tānda was the 'capital' or 'centre of Bengal' and not Gaur,

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Ludovico Varthema (1503-1508 A.C.) writes, "In the said *city of Decan* there reigns a king who is a Mohammedan." Here the term applies, as Dr. Badger points out, to the city of Bījāpūr. Travels, Hakluyt Society's Edition, 117 and note. See also Yule and Burnell, Hobson-Jobson, ed. Crooke, p. 301.

Tavernier informs us that "Siam, the *capital town* of the kingdom, and the ordinary residence of the king, is surrounded by walls, and is more than three of our leagues in circuit." It is obvious that he means Yūthiā or Ayūthia, the old capital of the country." Travels, ed. Ball, II, 288. Elsewhere he speaks of 'the *town* of Nepal.' *Ibid.*, II, 263.

"Some old documents in Valentijn speak of the old *city of Coromandel*. It is not absolutely clear what city was so called (probably by the Arabs in their fashion of calling a chief town by the name of the country), but the indications point almost certainly to Negapatam." Hobson-Jobson, *Ibid.*, 257. See also Varthema, *loc. cit.*, 186 and note.

and the fact that Tānda is separately mentioned in the *Āīn-i-Akbarī* in or about or the 42nd year, may be, not unreasonably, said to have nothing to do with the matter. The separate mention is, moreover, easily accounted for. The *Āīn* passage was written, as I have shown elsewhere, after the foundation of the new capital of Akbarnagar in 1002-3 A.H. Tānda had then ceased to be the 'seat of royalty or government' (دار الملک), and Akbarnagar had taken its place. The mint at Tānda appears to have been retained for the coinage of silver, but it had lost its pre-eminence and with that, its right to the designation 'Bangāla.' That appellation seems, in accordance with the old custom in such matters, to have been transferred to the new town which had now become the 'first city' in the province, and acquired the right of coining gold also.

Briefly, there would appear to be *fairly good* grounds for thinking that *Bangāla* was not the real or fixed name of any town or city, but an alternative or honorific designation by which the *capital of the province at the time being* was known. Thus the *Bangāla* of Mun'im Khan's time *might have been* Gaur, and it is *not impossible* that during the subsequent twenty years the name was sometimes applied to Tānda. The *Bangāla* of the coins of the 39th and following years of Akbar's reign would, by parity of reasoning, be Akbarnagar.

Abūl Faẓl tells us that Bangāla was one of the four places in the Empire in which alone all the three metals were coined, at the time when he drew up the famous list of Akbarī mints in the *Āīn* (Blochmann, Trans., I, 31), *i.e.* about the forty-second year. Now we actually possess coins of Akbarnagar in all the three metals. At least, two Muhrs of the Ilāhī type are known. They are unluckily "peculiar in exhibiting no date beyond the Persian month." One or two very rare rupees of the Ilāhī type have also been found. (P.M.C., xliii.) One of these is in the Lakhnau Museum, to the Curator of which (Mr. K. N. Dikshit) my acknowledgments are due for the favour of an excellent plaster-cast, which shows that it is of the 50th year (Tīr). The date of the copper coin in the Whitə King collection (994 A.H.) lays it open to suspicion, and it is not easy to say whether it is the year or the mint-name that has been incorrectly deciphered. But it may be asked, if Akbarnagar is no other than Bangāla, why have we coins of Akbarnagar and of Bangāla also? I can only reply that the mint-masters of Akbar's day appear to have seen nothing absurd or incongruous in the practice. Here we have rupees of Bangāla, the latest of which, be it noted, is of 1011 A.H. and undated gold coins, silver pieces of the 50th year and a doubtful copper coin of Akbarnagar. So we have a gold muhr of Kashmīr and silver as well as copper coins of Srīnagar. The parallel case of

the rupees of Elichpūr and Birār might be also just mentioned with the reservation that the reading 'Birār' has not been satisfactorily established.

Junāgadh, 15th *January*, 1918. S. H. Hodivālā.

Tatta or Patna?

The mint-name on the unique Shāhrukhī of Bābur in the White King cabinet was read as 'Tatta' by that exceedingly lucky and industrious collector, and the decipherment has met with acceptance from Mr Whitehead and others. It is now nearly fifty years since Blochmann first called attention to the fact that Tatta and Patna were very liable to confusion in Persian writing. (*Āīn*, Tr. I, 378, note.) About twenty years later, Mr. Lane Poole expressly warned numismatists against the pitfall in the Introduction to the British Museum Catalogue. "The mint Tattah has frequently been confused with Patnah. The distinction is explained in a footnote to p. 37" (p. liv). In the footnote we are informed that "this mint closely resembles Patnah, but has an upright stroke less; Tattah is ﺩﺩﻩ and Patna ﺩﺳﻩ." More recently, Mr. Beveridge has detected at least four instances of the error in Sayyad Aḥmad Khān's edition of the *Tūzuk-i-Jahāngīrī*, and directed his readers' attention to them. (Rogers and Beveridge, Trs I, 229 (450), 242, 267 and II, 81.). Lastly, there is the authority of Mr. Nelson Wright for saying that even the extraordinary knowledge and experience of Rodgers could not save him from being deceived by the resemblance. Old I.M.C., No. 7464, (new I.M.C., 1070), he tells us, is really of Tatta, but "the mint has been mistaken for Patna" (I M.C., III, 124, note).[1]

In these circumstances, I crave permission to suggest that the attribution of the Shāhrukhī to a mint of which there is not another issue for more than sixty years stands in need of reconsideration. Fortunately, the coin is illustrated by the excellent autotype plate accompanying Dr. White King's article (Num. Chron., 1896, Pt II, 158, Pl. XI, fig. 3), and the opportunity of forming an opinion of our own is not denied to us. Judging from the plate, it seems to me that the ascription to Tatta is not so certain that it cannot be challenged. An

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[1] Rodgers himself was by no means oblivious of the pitfall. "There is a possibility," he writes, "that this mint [Tatta] may be Patna. The coins are, however, so rough that they do not in any way resemble some remarkably fine coins I have struck undoubtedly at Patnā." Rupees of the Months of the Ilāhī Years of Akbar, J.A S.B., 1883, p. 104, note

B.M.C. No. 189 is said to be of Tatta and the year has been read as 36. Mr. Whitehead has suggested that P.M.C. No. 880 is also of Tatta mint. The date is 981 in words. As Tatta was surrendered by Mirzā Jānī Beg Tarkhān, the last independent ruler of the province, only in the 37th year, both these decipherments would seem to stand in need of revision.

additional "upright stroke" does seem to be there, and the least that can be said is that if the odds are not decisively in favour of Patna, they are also not against it.[1]

However that may be, there is another aspect of the matter which should not, in such doubtful cases, be overlooked; I mean, the historical. The fact is that there is not to be found in any of the original histories of the Mughal Emperors anything to show that Tatta or *Lower* Sindh was, at any time, an integral part of Bābur's dominions. Neither Badāonī nor Niẓāmuddin Aḥmad nor the habitually panegyrical Abūl Faẓl nor any other historian of the dynasty says that Bābur ever invaded that part of the country, or possessed any authority there. The truth is that like Gujarāt, Mālwa, Jaunpūr, etc., Sindh became altogether independent of the Dehlī Sulṭāns on the fall of the Tughlaqs. "The Sammā Kings," says the Imperial Gazetteer, "gradually extended their authority over the whole of Sind, the zenith of their fame being reached in the time of Jām Nizāmuddin, better known as Jam Nandā, who died in 1509 after a reign of forty-six years. The line ended with Jām Fīroz who was conquered by Shāh Beg Arghūn in 1520.... Shāh Beg afterwards conquered the fort of Bukkur and rebuilt the fortifications with bricks taken from the ancient stronghold of Aror." Shāh Beg died in 1522. "His son and successor, Mirzā Shāh Hasan, finally drove Jām Fīroz from Tatta to Cutch and at length to Gujarāt where he died... Shāh Hasan died childless in 1554 after a reign of twenty-two (*sic*) years, and with him ended the Arghūn dynasty." (XXII 396-7.) The Arghūns were succeeded by the Tarkhāns and it was only after Mīrzā Jānī Beg Tarkhān surrendered Tatta to the Khān-i-Khānān 'Abdur Raḥīm in 1592 A.C. that *Lower* Sindh was reunited to the Empire of Dehlī after an interval of more than two hundred years.

On the other hand, it is quite clear that the hosts of Bābur overran Bihār more than once during his short reign, and that he was, at his death, master of a considerable part at least of the province. Badāonī roundly tells us that "the Prince [Humāyūn] having taken the country of Harand [a misreading of Kharīd] and *Bihār* from Naṣīr Khān Luhānī, and having appointed Khwājā Amīr, Shāh Ḥasan and Amīr Junaid Birlās to the government of Jaunpūr, proceeded by way of

[1] Tatta is written ته, with or without all the dots, on I.M.C., 256, 808, and B.M.C., 643, 701, *or* ٹٹہ on B.M.C., 199 and 468, and I.M.C., 799.

Patna is written پٹہ on B.M.C., 209, 525 and 728, *or* پٹنہ on B.M.C., 131, 467, 608 and I.M.C., 99, 248 and 764.

The name on the Shāhrukhī is thus written پٹنہ.

Kālpi " and rejoined his father some time before the battle with Rānā Sāngā in 1527 A.C. (Ranking's Trans.. I, 445-6.) Abūl Faẓl's account is a little more circumstantial but similar (Beveridge, *Akbarnāma*, I, 256-7.)

About two years afterwards we again hear of the Mughals invading Bihār.

"On 3rd Jumāda'l-awwal [935 A.H., 25th January, 1529], news came that Maḥmūd, the son of Iskandar, had taken Bihār and was raising the head of rebellion. His Majesty returned from hunting to Āgrā and it was settled that he should proceed in person to the eastern districts..... On Thursday, the 17th of the said month, he crossed the Jamnā, and went towards the eastern districts. In these days the ambassador of Nuṣrat Shāh, the ruler of Bengal, brought valuable presents and did homage..... Near Karra news came of the defeat of Maḥmūd Khān, son of Sulṭān Sikandar. Having advanced near the borders of Ghāzīpūr, he stopped at Bhojpūr and Bihiyā. In that place *Bihār was bestowed on Mirzā Muḥammad Zamān.* On Monday, 5th Ramaẓān, being set at ease with regard to Bengal and *Bihār*, he proceeded to Sirwār to put down Biban and Bāyazīd. The enemy engaged with the victorious army and was defeated. After visiting Kharīd, and Sikandarpūr and being satisfied with the state of things there, he rode post towards Āgrā which he reached in a short space of time." *Ibid.*, I, 270-1.

Firishta is equally explicit.

"Towards the close of the year, the King received advices that the Prince Mahmood, son of the late King Sikundur Lody, had obtained possession of the province of Behar..... The King....marched in person towards Behar. On reaching Kurra, Julal-ood-Deen Noosrut Shah Shurky, the ex-king of Joonpoor, prepared a royal entertainment. Mahomed Zaman Mirza was detached from Kurra to Behār from whence he expelled the Prince Mahmood Lody, but in a few months after, the Afghans of Behar, collecting troops, advanced again towards the Ganges. The King, on this occasion, detached Askurry Mirza with a division to oppose them at the Budry ford, and himself followed next day with the rest of the army. On reaching the banks of the river, he was preparing boats to cross when Cheen Teimoor Sooltan, who had already gained the opposite bank with only eighty horse, attacked without hesitation. Askurry Mirza, who had crossed at another place, also appearing fortunately in the enemy's rear, threw them into confusion and they fled. Noosrut Shah now joined the King, and promised to aid in the expulsion of the Afghans; and Babur having given orders to Sooltan Jooneid Birlass to prosecute the war in conjunction with Noosrut Shah returned to Agra." (Briggs, Rise of the Mahomedan Power, Calcutta Reprint, II, 62-3.)

This is from the translation of Briggs which was made

from an imperfect text. In the better and fuller recension which he himself afterwards edited, and of which the Lakhnau Lithograph is an inexpensive reproduction, we are expressly told that Bābur visited the tomb of Shaikh Yaḥyā, the father of Shaikh Sharf, which is at Maner, and gave away great sums in alms there.

و چون بقصبهٔ منیر رسید مزار شیخ یحیی پدر شیخ شرف منیري را زیارت کرده و خیرات بسیار نموده بآگره تشریف حضور ارزاني فرمود *

Lakhnau Lithograph, I, 211, l. 4.

Now, Maner is only 10 miles distant from Dināpore Cantonment (Imp. Gaz., XVII, 175), which is itself so close to Patna city that Dināpore, Bānkīpore and Patna are "regarded as one continuous narrow city hemmed in between the Ganges and the railway." (*Ibid.*, XI, 355.) It would appear then that the Imperial armies not only overran and seized Bihār, but that Bābur himself was for a time in the immediate neighbourhood of Patna, if not in Patna itself.[1]

Two other relevant facts may be also mentioned. There is in the *Bāburnāma* or *Wāqi'āt-Bāburī* (Memoirs of Bābur), a detailed statement of the revenues of "the countries from Bhera to *Bihār*" which had "submitted in a short time to his victorious standards." About twenty-five provinces are enumerated, but there is no reference whatever to Sindh, Upper or Lower. At the same time, the income from Bihār is given as 4,05,60,000 Tankas (E.D., IV, 262; Thomas, Chronicles., 390-1; A. S. Beveridge, Memoirs of Bābur, 521-2; Erskine, History of Baber and Humāyun, I, 540-543).

Secondly, there is, in the *Fathnāma* or 'Letter of Victory' which was issued in the Emperor's own name after the battle with Rānā Sāngā, the explicit statement that the "Divine favour had caused our standards to be upreared in the territories of Dihlī, Āgra, Jūn-pūr, Kharīd, *Bihār*, etc." (A. S. Beveridge, *op. cit.*, 561 or Leyden and Erskine, Memoirs of Baber, ed. 1826, p. 360.)

Briefly, we have the conqueror's own word for the fact

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[1] I have contented myself with citing the summaries of Abūl Faẓl and Firishta. Bābur's own account of the second Eastern campaign occupies between forty and fifty pages in Mrs. Beveridge's Translation of his Memoirs, and is too long to quote in integrity. The references to the settlement of Bihār will be found at pp. 661, 662, 676 and 679. The visit to the tomb of Shaikh Yaḥyā of Maner is mentioned on p. 666. This Bengal campaign is also described in Mr. Lane Poole's monograph, 190-192, and Elphinstone's History of India, ed. Cowell, 435-6.

Kharīd is now a pargana in Ballia district, United Provinces, and lay formerly on *both* banks of the Ghogrā. A. S. Beveridge *Op. cit.*, 664 note. Bīhīya is a town in the Arrah Subdivision of Shāhābād district, Bengal. Imp. Gaz., VI, 5 and VIII, 173. Sikandarpūr is in Bānsdih tahṣīl, Ballia district. (*Ibid.*, XXII, 362.)

that he had overrun and settled Bihār. His own silence about Sindh is also most significant. The absence of any allusion in the histories of the Mughal dynasty to Bābur's conquest of or suzeraintv over Lower Sindh also militates with some force against the Tatta reading.

It is therefore all the more necessary to quote a statement to the contrary which occurs in the *Tarīkh-i-M'aṣūmī*, a History of the Province written by Mīr Muḥammad Ṁ'aṣūm in 1009 A.H. This author asserts that "when Shah Hoosain [Arghūn] ascended the throne of his father at Nusurpoor, the Syuds, Kazees and the chiefs represented to him that it was right to have his name read in the sermon. Shah Hoosain said it was not proper for him to do so as long as any of the descendants of Sahib Kiran were remaining, and the name of Babur Badshah was read."[1] (A History of Sind, Trans. G. G. Malet, Bombay, 1855, p. 95).

It should be observed that Mīr M'aṣūm speaks of Shāh Ḥusain having ordered the *Khuṭba* to be read in Bābur's name *contrary to the wishes of his chiefs and Amīrs*.[2] He does not make any *explicit* statement in regard to *coins*, and we are left to draw our own inference on that head. But the *Khuṭba* and the *Sikka* generally, if not always, went together,[3] and his expressions might plausibly be construed to mean that Shāh Ḥusain resigned that regal privilege also and permitted Bābur's titles and not his own to be displayed on the local money. The bearing of this inference on the matter in issue is obvious. The question we have to decide is. 'Is the statement itself true'?

Unfortunately, this hearsay report of some local or family tradition receives no corroboration from any other source, and is opposed to some well-known facts and authorities. It is flagrantly contradicted and belied by Shāh Ḥusain's (or Ḥasan's) subsequent conduct towards Bābur's son and successor.

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[1] A similar statement occurs also in the Tarkhān-Nāma (Elliot and Dowson, I, 312), but it is really taken at second-hand from the History of M'aṣūm (see the remarks in E.D. I., 301), and has consequently no independent value.

[2] This seems to me to clearly imply that Husain's father, Shāh Beg Arghūn, had had the Khuṭba read in *his own* name and not Bābur's. The "Chiefs and Amirs" were evidently, in favour of the practice being continued.

[3] Thus we are told that Hindāl had the Khuṭba read in his own name during Humāyūn's absence in Bengal, but he is not said to have gone to the length of striking coins. (Beveridge, *Akbarnāma*, Trans. I, 338, 339; Ranking, Badāonī, Trans. I, 459, *Ṭabaqāt-i-Akbarī* in Elliot and Dowson, V, 202.) So again, Mun'im Khān was once obliged by Mirzā Sulaimān's sudden invasion of Kābul to consent to the recitation of the Khuṭbā in the invader's name, but there is no allusion whatever to coins. (Beveridge, *Akbarnāma*, Trans. II, 43; Lowe, Badāoni, Trans. II, 5; *Ṭab. Akb.* in E.D., V, 249.)

It is also in conflict with the utterances of Jauhar and Firishṭa—equally good authorities.

According to Mīr M'aṣūm, Shāh Ḥusain's loyalty and devotion to the *House* of Tīmūr was so fervent and unselfish, that he would not have his own name inserted in the *Khuṭba* "as long as any of the descendants of *Sahib Kiran* [Tīmūr] were remaining." M'aṣūm's work is not without merit, but it is to be remembered that he wrote about eighty years after Shāh Ḥusain's accession. On the other hand, Jauhar—a personal attendant who was with Humāyūn throughout his wanderings in Sindh—assures us that "Shāh Hussyn Sultān, Ruler of Tatta, had assumed the title of Majesty, being lineally descended from the Emperor Timur." (*Tezkereh Al Vakiāt* or Private Memoirs of the Moghul Emperor Humāyūn. Trans. C. Stewart, 1832, p. 29). The same eye-witness informs us that the Emperor sent Mun'im Beg to remonstrate with Shāh Ḥusain and request him "not to pursue his vengeance any further. But Hussyn refused to see the messenger. and wrote an uncivil letter asking 'What benefits the King had ever conferred on him that he should now have any consideration for his distress ?'" (*Ibid.*, p. 32).

The duplicity and perfidious cruelty of the ruler of Tattā are described in the most bitter terms by the historians of Humāyūn's flight. There was never much love lost between the Arghūns and Bābur, who had deprived and driven out Shāh Beg, the father of Ḥusain, from Qandahār. Indeed, Shāh Beg is said to have turned his eyes towards Sībī and thought of establishing his power in Sindh, only when he was convinced by Bābur's repeated invasions from Kābul that he "would not rest contented until he had conquered and brought Qandahār under his own rule." (*Tarkhān-Nāma* in Elliot and Dowson, I, 307.) [1]

We have seen Jauhar expressly stating that "Shah Hussyn had assumed the title of Majesty." Firishta who wrote about 1018 A.H.—only nine years after M'aṣūm—declares of his father, Shāh Beg, that he "marched in the same year [927 A.H.] towards Tatta and possessing himself of it, had his name recited in the *Khuṭba* and *stamped on the coins of that country.*"

در همان سال بجانب تهته شتافت و آنرا متصرف شده خطبه و سکهٔ آندیار بنام خود گوردانید *

Lakhnau Lithograph, II, 321.

[1] This is again taken from M'aṣūm who writes: "Shah Beg went to Seebee,.... telling his nobles that Babur Badshah had come this time to see the road to Kandahar; it is probable that he will again raise on high the banner of march against it next year: for *until he has turned me out of my place he will not find repose.*" History of Sind, Trans. Malet. 77.

He leaves us to infer that Shāh Ḥusain did the same when "following in the path of his father," he "reduced those towns which had not yet been subdued by his predecessor." (Briggs, Rise of the Mahomedan Power, IV, 435.) Once more, in his account of Ḥusain's successor, Mīrzā 'Īsā Tarkẖān, he writes :—

بعد از فوت شاه حسین ارغون سلطان محمود در بهکر و میرزا عیسی ترخان در تهته داعیه سروري نموده هریک درجا و مقام خویش خطبه و سکه بنام خود کردند *

Lakhnau Lithograph, II, 322, l. 12.

"After the death of Shāh Ḥusain Arghūn, Sulṭān Maḥmūd in Bhakkar and Mīrzā 'Īsā Tarkẖān in Thattah each proclaimed his own supremacy and in his own place and residence, had the *Khuṭba* recited and *coins struck in his own name.*"

Briefly, if we are to believe Firishta, not only Shāh Beg Arghūn, but Sulṭān Maḥmūd of Bhakkar and Mīrzā 'Īsā Tarkẖān of Tatta had all declared their independence, and in token thereof, struck coins in their own names which were inserted likewise in the Khuṭba.

This receives partial corroboration from a fact mentioned incidentally in another Provincial History of some credit—the *Tārīkẖ-i-Tāhirī*—which was composed in 1030 A.H. by Mīr Ṭāhir Muḥammad. (E.D. I, 255.) In his account of the Khān-i-Khānān 'Abdu-r-Raḥīm's invasion of Sindh, he writes : "Mīrzā Jānī Beg Sultān made this agreement with his soldiers that every one of them who should bring an enemy's head should receive 500 *gabars*, every one of them worth twelve Mīrī's, called in the Mīrzā's time *postanīs*, of which seventy-two went to one *tanka*." (Elliot and Dowson, I, 287.) These *gabars*, *mīrīs* and *postanīs* were apparently coin-denominations unknown elsewhere and it would seem as if the independent rulers of Lower Sindh had not only stamped money in their own name but that the province had a coinage-nomenclature of its own.

I may be now permitted to sum up the results of this discussion. The name of mint-town on the Shāhrukẖī (or Bāburī) in the White King collection is written in such a way that it does not exactly resemble either of the two forms in which the names Tatta and Patna are exhibited on the coins of the Mughal Emperors from Akbar to Muḥammad Shāh. The names themselves are exceedingly liable to be confused in Persian writing. The historical arguments against the attribution to Tatta are that Bābur never invaded Tatta itself or any part of Lower Sindh, that he does not include Sindh in the famous Statement of the Revenues of the Provinces of Hindustan which was drawn up in or about 935 A.H. (Beveridge, Memoirs, 520, 522 *n*), that he himself puts forward no claim to be the suzerain

of Shāh Ḥusain [1] and that no historian of the Mughal dynasty asserts that his authority or sovereignty had been formally acknowledged by the independent rulers of the province. It is true that in a Provincial History called the *Tarīkh-i-M'aṣūmī* there is a statement to the effect that Shāh Ḥusain Arghūn had the Khuṭba read in Bābur's name but this assertion is so far unsupported. It is, moreover, in conflict with the utterances of Jauhar and Firishta, and scarcely consistent with the subsequent behaviour of Shāh Ḥusain towards Humāyūn.[2] On the other hand, it may be urged in favour of the ascription to Patna, that Bābur expressly includes Bihār among the provinces overrun by his armies soon after the battle of Pānīpat, that the revenues of Bihār are expressly mentioned in the Imperial Rent-Roll, that there is a detailed account of his second Bengal campaign and his settlement of Bihār itself in the 'Memoirs,' and that his visit to the shrine of Shaikh Yaḥyā at Maner, which is only 10 miles from Patna, is recorded in his invaluable Autobiography.

None of these statements, *pro* and *contra*, is without force, but there is also nothing absolutely conclusive about any or even all of them, and there is consequently nothing to preclude the *possibility* of this unique coin having been struck at either of the two places in dispute. We may accept Firishta's assertion that Shāh Beg Arghūn had the Khuṭba read and coins struck in his own name, but he does not categorically declare that Shāh Ḥasan did so. We may admit that Sulṭān Maḥmūd of Bhakkar and Mirzā 'Isā Tarkhān of Tatta issued

[1] In his 'Summary of the Life of Meerza Shah Hoosain,' M'aṣūm himself says: "In his youth he went from Kandahar to Babur Badshah at Kabool, remaining with him two years. Babur always spoke in praise of him, saying: Shah Hoosain Beg has not come to me for service, but he has come *to learn the customs of Kings.*" History of Sind, Malet's Translation, 128-9. There is a similar statement in the *Tarkhān Nāma*: "In this same year, Shāh Hasan Mirza having quarrelled with his father, left him and went to the court of the Emperor Babur..... The Emperor observed that his visit was not from any affection entertained towards himself by Shāh Hasan, but in order that he might learn the art of governing rightly, and at the same time perfect himself in the ceremonies of the Court." Elliot and Dowson, I, 308.

Shāh Ḥusain's father, Shāh Beg, appears to have openly defied Bābur and repudiated his claim to be the superior of the Arghūns. Indeed, Bābur complains that Shāh Beg had, in writing to him, been so rude as to "impress the seal on the back of the letter, in the place in which one Amīr writes to another, nay, where an Amīr of some rank sets his seal in writing to an *inferior* Amīr." Leyden and Erskine, Memoirs of Baber, 225-226.

[2] Mrs. Beveridge has pointed out that M'aṣūm's chronology is often manifestly erroneous (Memoirs of Bābur, 366), and that his account of the siege of Qandahār is contradicted by the contemporary narrative of Khwāndmīr in the important matters of date and mode of surrender. "Khwāndmīr's dates," she writes, "agree with the few fixed ones of the period and with the course of events; several of M'aṣūm's on the contrary, are *seriatim* five (lunar) years earlier." *Ibid.*, 435.

money in their own names, but that would not prove that their predecessor Shāh Ḥasan had never struck coins in the name of Bābur. We may acknowledge that Jauhar may be correct in saying that he had "assumed the title of Majesty", but then there is nothing to show that this was done during Bābur's life-time, and the Āftabchī's words may be perhaps, construed to mean that the event took place at some time after Humāyūn's accession, if not after the latter's defeat and flight from Āgra.

Shāh Husain had gone to Kābul after a quarrel with his father, and been hospitably received and kindly treated by Bābur. He had then made his peace with his parent, and fought on the latter's side during Bābur's last siege of Qandahār. He was, throughout life, an opportunist and time-server. a politician accustomed to trim his sails to the prevailing wind. He had seen his father repeatedly trying conclusions with Bābur and known him repeatedly worsted. He knew that he held Sindh by an exceedingly uncertain tenure and that he himself was no match for the Emperor. It is, therefore, *just possible* that he tried to disarm Bābur's hostility and curry favour with him by conceding the empty honour of the Khuṭba and even striking a few coins in token of submission. The yoke would sit very lightly on such a man, and he would not scruple to throw it off at the first opportunity. We know that it *was* thrown off when the proper time arrived, and there can be no difficulty in understanding his conduct in the days of Humāyūn's adversity.

In setting out the historical arguments for and against the two rival readings, I must not be deemed to prejudge the point in dispute. The question is an exceedingly difficult one and my present object is merely to clarify ideas and assist in obtaining the well-considered judgments of others who are entitled to speak on the subject. The same remarks apply to most of the notes in this article, which are intended to elucidate opinion and not to forestall it.

Junāgadh, January, 1918. S. H. Hodivālā.

Chunār or Ḥiṣār?

In his note on the Chunār Mint, Mr. Whitehead says: "The coin in this collection in the only piece in copper published from this mint. The mint-name is situated on it in such a way that it might be read as the latter part of the word Ḥiṣār, but I think Mr. Rodgers' attribution to Chunār is correct, because all the Ḥiṣār *fulūs* which resemble the piece under discussion, are of the *ilāhi* type." (P.M.C., Introd., lxx.) Luckily, the coin is dated and the year نهصد و شصت و هفت (967) is clearly given in *words* on the reverse. It seems to me that

the difficulty is not so easily solved, for apart from the admittedly ambiguous and fragmentary character of the name on the obverse there is a historical objection which must be answered before the Chunār reading can be accepted. That objection is that Chunār appears to have been surrendered to Akbar *at the earliest* in 969 (perhaps 970 A.H.), and that it did not belong to the Mughals at all in 967 A.H.

In his chronicle of the sixth year of the reign (24 Jumāda II, 968—5 Rajab, 969) Abūl Faẓl says: "One of the ennobling events in the Shāhinshāh's fortune which in this year applied collyrium to the eyes of the simple-minded aspirants after auspiciousness was that Chunār, which is an impregnable fortress, came into the possession of the imperial servants..... The brief account of this event is that when 'Adili's son became a vagrant in the wilderness of ruin, the fort of Chunār which had been his abode came into the hands of one Fattū who belonged to his clan (Khāṣa Khel). He regarded this inaccessible fort as his refuge and laboured to strengthen it. When the standards of fortune returned from the town of Karra and were set down at Āgrā [this was on Friday 17th Zil-hajja, 968, 29th August, 1561, see p. 230], Khwāja 'Abdul Majīd Āṣaf Khān was appointed to take the fort. As Fattū had some proper feelings and some good sense. he perceived that the day of the Afghans' defeat had arrived, and so sent a number of people to express his submission." (Beveridge. *Akbarnāma*, Trans., II, 231.)

Niẓāmuddin Aḥmad's account is very similar, except that he puts the event into the ninth year (971-972 A.H.). "The fort of Chunār," he declares, "was held by a slave of 'Adali named Fattū. He now wrote a letter offering to surrender it. The Emperor sent Shaikh Muḥammad Ghaus and Āsaf Khān to receive the surrender of the fort." (*Ṭabaqāt-i-Akbarī* in Elliot and Dowson, V, 287-8.) Badāonī describes the circumstances almost in the same words, with this difference, that he reckons it among the events of 970 A.H. (Ramaẓān). (Lowe, II, 62.)

Now putting the matter on the lowest ground, and supposing the earliest and not the latest of these dates to be the correct one, it is difficult to believe in the existence of a Mughal mint at Chunār in 967 A.H. The argument from type is not without interest, and has its uses on occasions, but it is apt to lead to very uncertain results. We really know very little of the principles which governed the determination or variations of type. We can hardly be sure that there were any fixed principles in the matter at all. In any case, such an argument can scarcely bear down the explicit statements of the contemporary historians. I submit, therefore, that the weight of the evidence, so far as it goes, is against Chunār instead of being in its favour.

Mr. Whitehead informs us that "one or two early Rupees of Akbar were struck" at Chunār, and he has made room for Chunār in the list of that Emperor's silver mints. Of the two Rupees, one was in the cabinet of Mr. Bleazby, and is now in the British Museum. The other is in this country and is in the Government collection at Lakhnau. This coin Mr. C. J. Brown has kindly examined very carefully at my request, and his opinion is quoted below: "The coin was called Chunār by Ellis whose collection the Museum bought. There is no trace of a mint-name on the coin. He might have seen another similar specimen with a mint name, but I should think it unlikely. The date is 970 or 975; the unit is blurred."

Thus far, the evidence appears to go against the inclusion of Chunār among the copper mints of Akbar, and also against its being reckoned among that Emperor's silver mints. But the latter point cannot be decided so long as Mr. Bleazby's coin remains unpublished.

28th December, 1917. S. H. Hodivālā.

Khairpūr or Ujainpūr?

"The mint of Khairpūr, a town in Sindh, is only found," writes Mr. Whitehead, "on a few copper coins of Akbar. Coin No. 656, [correctly No. 655] dated A.H. 997, is of an unpublished type. Ilāhī pieces of the forty-fifth and forty-seventh years are known, and are exemplified in the Indian Museum. I.M. Cat., No. 462." (P.M C., lxxiii.) The place meant is, no doubt, the capital of the feudatory state of that name (Lat. 27° 31′, Long. 68° 48′) in *Upper* Sindh, 17 miles south of Rohrī (Bhakkar).

There is a difficulty in the way of this identification to which I must beg permission to invite attention. No town of the name of Khairpūr is mentioned in Abūl Faẓl's lengthy account of the province. (Jarrett, II, 333-47.) We should expect to find it among the Mahāls of the Sarkār of Bhakkar (*Ib.*, 333-4), but there is no trace of it there. Nor is such a place spoken of in any one of the eight Histories of Sindh of which there are translations or abstracts in the first volume of Elliot and Dowson's invaluable work. Nor is there a single reference to it in any of the Chronicles of Mughal domination in India. Indeed, there are fairly good grounds for believing that the town is altogether modern, and that it did not exist at all in the days of Akbar. The writer of the article on Khairpūr in the Imperial Gazetteer says: "On the present site of the town, which owes its rise to Mīr Sohrāb Khān Tālpūr, there stood prior to the year 1787, the village of Boirā and the Zemindāri estate of the Phulpotras. It was selected as the residence of the chief Mirs of Northern Sind, and for some time during

Tālpūr rule, a British resident was stationed here in terms of the treaty of April 20, 1838, concluded between the British Government and the Mirs of Sind." (Ed. 1908, XV, 216.)

If this is correct, and it appears to be based on reliable local information or official reports,[1] the identification with the capital of the Mīr must be abandoned.

There is a Khairpūr in Bahāwalpūr State, Panjāb, 38 miles North-East of Bahāwalpūr town.[2] There is another town of the same name in the 'Alipūr Taḥṣīl of Muẓaffargarh district, Panjāb, but the latter is said to have been founded only in the 19th Century by a Bukharī Sayyad of the name of Khair Shāh (Imp. Gaz. *s. n.*).

Rodgers was the first to publish a *fulūs* of the type represented by I.M.C., No. 462. The legend on the obverse is far from being perfectly clear. He boldly read it as ضرب فلوس اكبر شاهي سكه, but said at the same time that he did not know where Khairpūr was. (Indian Antiquary, 1890, p. 223, Pl. II, fig. 25.) Mr. Nelson Wright does not see any trace of the ضرب or of the سكه on the obverse. (I.M.C., III, No. 462.) The specimen in the Panjāb Museum dated 997 A.H. is of a very different type. It is peculiar in having a dotted belt across the centre both on the obverse and reverse—an 'ornament' which is found only on some coins of Aḥmadābād and a rare issue of Āgra.[3] Khairpūr in Persian writing (خير پور) bears no small resemblance to Ujjainpūr اجين پور *Cf.* P.M.C., No. 575. I venture to suggest that the reading is erroneous and that the Ilāhī coins of 45 and 47 R., at least, may be issues of *Ujainpūr* or *Chainpūr*.

Junāgadh. S. H. Hodivālā.

Deogarh.

The identification of the mint-town Deogarh is not free from difficulty. Two types of coins are known, which are very different from each other, though both purport to have issued from Deogarh in the reign of Shāh 'Ālam II. Several specimens of the first type were published by Dr. Hoernle in J.A.S.B., 1897, with the following remarks:—

"Nos. 40-44. Said to be coins of Jāora, a native state and town in Western Mālvā, Central India Agency, about 40 miles S.E. of Pratāpgarh on the railway line. They were all

[1] I find the same statement made in almost identical words in A. W. Hughes' Gazetteer of the Province of Sindh (1874), p 420.

[2] According to Shahāmat 'Alī's "History of Bahāwalpūr," this Khairpūr was founded "by Balawal Khan, and named after Kheir Mohammed, his cousin," about the middle of the 18th Century (p. 40).

[3] Information received from Mr. Whitehead (February 1919).

procured from Jaorā. In Webb's Currencies of Rajputana, p. 23, however, coins of this kind are ascribed to the Pratāpgarh State. No. 43 is a rupee, Nos. 40 *a* and 40 *b* are eight annas. No. 41 is a four-anna, No. 44 is a two-anna, and Nos. 42 *a* and 42 *b* are paisas. The dates of the coins are inconsistent The rupee (No. 43) has 1199 H. and 29 julūs of Shāh 'Alam : while the julūs should be 26..... The mint on the reverse of No. 43 seems to read clearly دیورہ *devarah* or *dēorā*, which has also been noticed on other specimens. The only Dēorā I know of is a small town on the Son river, in Bāghelkhand. in the Revā state, a few miles beyond the borders of the British district of Mirzāpūr. It certainly cannot be read جاورہ Jāvarah or Jaorā. On No. 40 *a* there are distinct traces, reading یوگ *evag*, which would make Devagarh or Deogarh. This is a small town in Gwāliyar, and is probably the name intended on all these coins." (*Loc. cit.*, pp. 268-9.)

The coins are figured and it is clear from the Plate (No. XXXII) that the second suggestion gives the correct reading of the name which is not دیورہ but دیوگرہ. But Dr. Hoernle was not equally happy in his attempt to determine the locality. Exactly similar coins are described and illustrated, as he himself admits, in Webb's Currencies of the Hindu States of Rajputānā, and are there ascribed to Pratāpgarh (or Partābgarh). It is common knowledge that these Partābgarh issues had at one time extensive circulation in those parts. under the name of Salīmshāhī rupees. An examination of the Salīmshāhī rupee 'current in Malwa and coined by the Rāja of Pertabgurh' of which there is a drawing on Pl. II in Prinsep's Useful Tables, leaves no room for doubt as to its identity with Dr. Hoernle's No. 43 and Webb's No. 9. Pl. III, the only difference being that the mint-name is partially visible on Dr. Hoernle's coin, but entirely absent from the others.

But if these coins are specimens of the Salīmshāhī issues of Partābgarh, why do they happen to exhibit the mint-name Deogarh ? The answer is that Deolia or Deogarh is the name of the old capital of the State of Partābgarh.

The compiler of the article on 'Partābgarh' in the Imperial Gazetteer writes : "The founder of the State was one Bikā, a descendant of Rānā Mokal of Mewār, who left his estates of Sādrī and Dariāwad in 1553, proceeded south, and subdued the aboriginal tribes. In 1561, he founded the town of Deolia or Deogarh, naming it after a female chieftain named Devi Mini, and subsequently he overpowered the Rajputs living further to the south and east..... Hari Singh's son, Pratāp Singh, who succeeded in 1674 founded the town of Partābgarh in 1698, and from it the State takes its name, though some of the people still use the older name of Kānthal. or uniting the names of the former and the present capitals, call

the State Deolia-Partābgarh. As recently as 1869, the chief was described in an extradition treaty then ratified as the 'Rajah of Dowleah and Partābgarh'" *Op. cit.*, ed. 1908, XX, 9-10.

Elsewhere in the same work, we read: "Deolia (*or Deogarh*) —The old capital of the State of Partābgarh, Rajputana, situated in 24° 2′ N. and 74° 40′ E. about 7½ miles due west of Partābgarh town." (*Ibid.*, XI, 247.)

Turning to the "Central India" of Malcolm, we find him speaking of "Dewla named also Pertaubgurh-Dewla," as a fortified town in the province of Ajmeer, the residence of the "Raja of Pertaubgurh." (*Op. cit.*, II, 398.)

Elsewhere he says that "Dewla is eight miles west of Pertaubgurh" (II, 417), and at p. 284 of the same volume, he informs his readers that *Dewla or Deogarh* is in Lat. 24° 2′ 9″ and Long. 74° 43′ 40″. It is clear then that Deola or Deogarh was the old capital, and even in Malcolm's time, it was the chief residence of the Rāja. (*Ib.*, I, 15.)

In a word, the Deogarh of these coins is not to be looked for in Gwāliar, but is Deola or Deogarh, the old capital of Partābgarh. The execution of these Salīmshāhī coins is exceedingly crude and imperfect, but they are "easily distinguished by the peculiar conformation of the Persian letters which are unlike those on any other coins in Rajputāna." (Webb, 25.) Another distinguishing feature would seem to be that on these issues, the year is always either 1199-25 or 1199-29 (26 ?) or 1236-ضلم 45 (Webb, 24-5).

Some confusion is created by the circumstance that Deogarh rupees and half-rupees of a very different type and apparently having little in common with them except the mint-name are also in existence. There are two specimens with the date 1193-20 in the Panjāb Museum. (P.M.C., Nos. 3008-9.) Mr. Nelson Wright informs us that he has one of 1190-17, and Mr. W. S. Talbot possesses a similar coin of 1198 A.H. (N.S., XIII, 241.) It is difficult to ascribe these coins to the Deogarh of Partābgarh, and the probabilities seem to be in favour of their belonging to some other *atelier*.

Unfortunately, Deogarh is a place-name of very common occurrence in this country, and the location of the mint is not easy. No less than nine places called Deogarh or Devgarh are noticed in the second edition of the Imperial Gazetteer. There is this to be said, however, that most of them turn out on examination to be more or less obscure towns or villages for which no historical or political importance can be claimed during the period to which the coins are restricted, and all but one of them are absolutely ignored in the Mughal histories.

In the first place, Deogarh is given as the ancient Hindū name of Deogīr or Daulatābād, but that obsolete form is hardly likely to have been resuscitated on coins in the last quarter of

the 18th Century. The Deogarh in the Santāl Parganas, and in the Bāmra Feudatory State, Bengal, may, perhaps, be dismissed as mere backwaters of civilization. There is a Deogarh in the State of Udaypūr, Rajpūtānā, but it is not enumerated among the Udaypūr mints in Webb's fairly exhaustive treatise on the Rajpūtānā Currencies (pp. 8, 16-19). The Deogarh in Lalitpūr Tahsīl, Jhānsī district, appears to be indebted for its fame, such as it is, to its ancient remains of the later Gupta and Chāndel periods, and its real consequence appears to have terminated many centuries before the accession of Shāh 'Ālam II. Deogarh-Bāriya, the chief town of a petty state in Rewā Kānthā Agency, Bombay, would seem to have equally small claims to consideration, and there is nothing to show that this chief was ever permitted to exercise the right of coining money. Devgarh in Ratnāgīrī district, Bombay, and Devgarh (or Hareshwar) in the State of Janjīra are only small villages. Attention may be also recalled to the fact that none of these localities is referred to by the historians.

The only place of that name which is mentioned in the Mughal Chronicles and other historical writings, is the Deogarh in Chhindwāra district, Central Provinces, and it is mentioned not once or twice, but a dozen times. Passing by the earlier references in the 'Bādishāhnāma' of 'Abdul Ḥamīd Lāhorī (*Bibl. Ind.* text, I, Pt. ii, pp. 110-111 and 230-2), where it is associated with Chaurāgarh and Nāgpūr, we come across the name several times in the *Maaṣir-i-'Alamgīrī*, and almost always in association with Chānda. For instance, we are told that in 1077 A.H., Daler Khān invaded the district of Chānda and extorted from its *Zamīndār*, Mānjī Malār [Ballār ?] a present of five lacs of rupees for himself, a kror of rupees as indemnity and fine for remissness in the payment of arrears and the promise of an annual contribution of two lacs. (*Bibl. Ind.* text., 59; See also *'Ālamgīrnāma*, *Ibid.*, 1022-5.) From Chānda, Daler Khān proceeded to دیوگڑہ, and squeezed from its ruler or 'marzbān,' Koka Singh, the handsome sum of fifteen lacs as arrears, and the promise of an annual *peshkash* of a lac of rupees. (*Maāṣir-i-Ālamgīrī*, 59-60; *'Ālamgīrnāma*, 1027-8.) Two years later, we hear that Daler Khān restored the territory of Deogadh to its Rāja with authority to govern it absolutely as before. (*Maāṣir*, 102.) We are next informed that in 1097 A.H. Bakht-buland was installed as zamīndār of Deogadh-Islāmgadh in the twenty-ninth year—1907 A.H. (*Ibid.*, 273.) Khāfī Khān also notices the invasion of Deogadh by Diler Khān in 1077 A.H. and expressly states that its frontiers were conterminous or marched with those of Chānda. دیوگڑہ کہ بسرحد چاندا متصل است (*Bibl. Ind.* text, 205-7.) We read again in his account of the events of the 43rd year of

the reign of Aurangzeb (1110 A.H.) that "the zamīndār of Deogarh, in consequence of disturbances in his country, and the superior force of those who disputed the inheritance, had fled to the Court of Aurangzeb, and had received the title of Buland-bakht (*sic*) upon his becoming a Musulmān. Upon hearing of the death of his competitor, he hastened back to Deogarh without leave, and opposed the officers who were appointed to collect the tribute. He now joined Rām Rāja in plundering the country." (*Muntakhabu-l-Lubāb* in Elliot and Dowson, VII, 364; *Bibl. Ind.* text, II, 461.)

If we now turn for light to the 'Imperial Gazetteer,' we read that Chānda is "the southernmost district of the Central Provinces in the Nāgpūr division.....From the time of Akbar until the days of the Marathas, the Chānda princes seem to have been tolerably independent and powerful, for in their own annals and in those of the Deogarh line, we find them recorded as gaining an important victory over the latter rising Gond power in the middle of the seventeenth century..... In 1751, the Gonds were ousted, and the district passed under the control of the Marāthās, forming from this period, a portion of the Nāgpur Kingdom." (Ed. 1908, Vol. X, pp. 148 and 150-1.)

In another place we are informed that "Deogarh, the headquarters of the old Gond dynasty of Chhindwāra and Nāgpur, is a village about 24 miles south west of Chhindwāra, picturesquely situated on a crest of the hills. For a short period towards the end of its existence, the Deogarh Kingdom became of such importance as to overshadow Mandlā and Chāndā, and to take first place among Gond States." Towards the end of the seventeenth century, Bakht-buland "went to Delhi and entered the service of Aurangzeb. He is supposed to have gained by his military achievements, the favour of the Emperor, by whom he was persuaded to become a Muhammadan. He was acknowledged as Rājā of Deogarh.....and established many new towns and villages, also founding the city of Nāgpūr..... The subsequent fall of the Gond dynasty and acquisition of the Deogarh Kingdom by Raghuji Bhonsla belong to the history of Nāgpūr." (*Ibid.*, X, 206.)

The compiler of the article on Nāgpūr declares that there is no historical record of Nāgpūr prior to the commencement of the eighteenth century, when it formed part of the Gond Kingdom of Deogarh in Chhindwāra. Bakht Buland, the reigning prince of Deogarh, proceeded to Delhi, and appreciating the advantages of the civilization which he there witnessed, determined to set about the development of his own territories. To this end, he invited Hindu artificers and husbandmen to settle in the plain country, and founded the city of Nāgpūr. His successor, Chānd Sultān, continued the work of civilization, and removed the capital to Nāgpūr. On Chānd Sultān's death in 1739, there were disputes as to the succession, and his widow invoked the

aid of Raghuji Bhonsla who was governing Berār on behalf of the Peshwā..... Raghuji on being called in by the contending factions replaced the two sons of Chānd Sultān on the throne from which they had been ousted by a usurper, and retired to Berār with a suitable reward for his assistance. Dissensions, however, broke out between the brothers, and in 1743 Raghuji again intervened at the request of the elder brother, and drove out his rival. But he had not the heart to give back a second time the country he held within his grasp. Burhān Shāh, the Gond Rājā, though allowed to retain the outward insignia of royalty, practically became a state-pensioner, and all real power passed to the Marathas..... Chānda, Chhatisgarh and Sambalpur were added to his dominions between 1745 and 1755, the year of his death." (*Ibid.*, XVIII, 306.)

This string of passages is somewhat long, but it is indispensable for forming a correct notion of the importance of the Kingdom of Deogarh, which appears to have extended over the modern districts of Betūl, Chhindwāra, Nāgpūr, and portions of Seonī, Bhandārā and Bālāghāt. (*Ibid.*, X, 13.) The capital was at Deogarh which is about 24 miles south-west of Chhindwāra town. "Though now containing only 50 or 60 houses, the traces of foundations in the surrounding jungle and the numerous remains of wells and tanks show that the former city must have covered a large area. Deogarh contains several temples and on a high peak outside the village stands a ruined stone fort. All the buildings are constructed of the finest limestone." (Imp. Gaz., ed. 1885, IV, 202-3.)

Deogarh does not appear to have entirely lost its importance even after the conquest of the kingdom by the Marāthās. The Gond Rāja of Deogarh always conferred the *tikā* on the Bhonslas on their accession and he had also "the right of putting his seal to certain revenue papers." (Imp. Gaz., 1908, X, 15.) It is not at all improbable that there was a mint at Deogarh. The rupees which were struck at the capital of the old sister-kingdom of Chānda by the Bhonslay Rājas and were "current in Nagpoor and the Nerbudda" are enumerated in Prinsep's List of Silver Coins. (Useful Tables, ed. 1834, p. 43.)

S. H. Hodivālā.

Sūrat and Ṣūrat.

The Panjāb Museum possesses a very rare Rupee of which Mr. Whitehead writes: "Coin No. 355, a square Ilāhī Rupee of the year 38, is the only known piece of Akbar bearing the name of this mint [Surāt], but as both the mint-name and the name of the month, probably intended for Ābān, are incorrectly spelt, the attribution to Sūrat cannot be called quite certain. The Rupee is undoubtedly genuine." (P. M. C. Introd.,

p. lxxxiii.)[1] Mr. Nelson Wright also is not sure that the ascription to Sūrat is "free from doubt." (I.M.C. Introd., lxxvii.)[2] Dr. Taylor goes a little further, and is of opinion that if it is Sūrat at all, it is not the well-known town on the Tāptī that can be meant. (B. B. R. A. S. Journal, 1907, p. 249, Note.)

What then are we to think? I beg to point out that صورت is not so inadmissible or incorrect a way of writing the name as has been taken for granted. There are in all languages some words which it is permissible to write in any one of two or even three ways. There are long lists of such double forms in many English dictionaries and the same thing is true of the names of persons and places. There are several Indian toponyms which equally respectable and competent writers spell in different ways, and at times, the *same* writer would appear to have seen nothing objectionable in the use of *both* forms.

An examination of the editions of the writings of the Musalmān chroniclers in the *Bibliotheca Indica* leaves the impression that Sūrat was one of them. Thus the name is written صورت at least once in the second volume of Badāonī's *Muntakẖabu-t-Tawārīkẖ* (p. 249, l. 3). The same form occurs once in the *'Ālamgīrnāma* of Muḥammad Kāẓim (p. 134, l. 21) and four times in the *Muntakẖabu-l-Lubāb* of Kẖāfī Kẖān (II, 248, l. 13; 251, l. 18; 444, l. 18 and 938 l. 21).

In the Lakhnau Lithograph of the *Ṭabaqāt-i-Akbarī*, we have on the same page قلعهٔ سورت in one line (p. 197, l. 13), قلعهٔ صورت in two others (ll. 12 and 16), and صورت only in l. 22. قلعهٔ سورت again occurs at p. 298, l. 20 and قلعهٔ صورت in the very next line. At p. 299, we find قلعهٔ سورت in l. 14, but قلعهٔ صورت in the line following and صورت, only in ll. 17 and 20. In the twelfth line of the following page we have قلعهٔ صورت again (300, l. 12). The commoner form سورت arrests attention at p. 304, l. 20, but then صورت recurs close upon its heels, l. 21.

I may also say that the name of the city is sometimes written with an initial ص in old Pārsī writings on religious subjects. I myself possess a manuscript Persian Revāyet written in 1022 A.Y. (1653 A.C.) by Hirbad Mihrnūsh Kaiqubād Māhyār Rānā of Navsārī (18 miles from Sūrat) in

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[1] Mr. Whitehead informs me (February 1919) that a second specimen of this rupee on which the name of the mint is written صورت is now in his own cabinet.

[2] Mr. Pannā Lal has described another rupee of the same year (38 R) on which the name of the town is written in the usual way with a س. The month is Ābān. Num Sup., XXVI, Art. 161.

which the form صورت occurs more than once (folio 135 *a*, l. 7 ; 178 *b*, l. 11).[1]

It is of course possible to dismiss these variations as the vagaries of copyists or the errors of printers. But it is also to be remembered that oriental scribes are notorious for slavishly following in every little detail the originals before their eyes, and the occurrence of the form صورت in so many different places may be plausibly explained by the supposition that the authors themselves were not sure that it was incorrect and were disposed to regard it as admissible.

The upshot of the matter seems to be that these variant readings are not undeserving of attention, but they can be hardly said to decide the matter in issue. Let us then see if any further evidence is available.

I have shown that the ع in عمر کوت is accounted for by the supposed connection of the town with 'Umar Sumra. It is not unlikely that the ص in صورت is due to the same propensity to etymologise the names of persons and places. The origin of the name of the town is obscure. According to one local tradition, it was first called Sūrajpūr or Sūryapūr and was afterwards renamed Sūrat by a pious Sulṭān of Gujarāt (Muẓaffar II), to make it agree with سورة, the Arabic word for a chapter of the Qurān. "Another story tells that a lady named Suratā, deserting the seraglio of the Emperor of Constantinople, was befriended by a great merchant of that city. Escaping together to Gujarāt, the merchant was struck with the site of a fishing village near Rānder. Here he settled, and succeeding in trade, raised the village into a town, and called it by his lady's name." (Bombay Gazetteer, Vol. II, Surat, p. 71.) Now صورت means 'image, form, figure, picture, portrait,' and صورتی has the sense of 'handsome.' (Steingass, Persian-English Dictionary, *s.v.*). *Suratā* would, in the usual process of meaning-making, be supposed to be an اسم با مسمی, 'a name expressive of its qualities,' signifying 'Beautiful as a picture.' The Persian poets habitually compare a lovely woman to an 'idol' (بت) or 'picture' (نگار). The name of

[1] The scribe was the high-priest of the Pārsīs of Navsārī, and a grandson of the famous Dastūr Mahīār or Mihrjī Rāna, for whom see Mr. Vincent Smith's Akbar, 163 and 478. The name of the town is written with a ص in other old copies also of the theological compilation known as the 'Revāyat of Dārāb Hormazdyār.'

The Mullā Firūz Library (Bombay) possesses a MS. copy of Mirzā Ṭāhir Vaḥīd's *Tārikh-i-Shāh 'Abbās-i-Ṣānī*. In this also the name of the town is twice written صورت in the section relating to the 'Affairs of Hindustān.' Reḥatsek's Catalogue Raisonné, IV, 27, p. 88.

the runaway mistress of the Ottoman would thus be written صورتا, and her city would, of course, be صورت.[2]

I may also notice, without laying any undue stress upon them, two other facts, which are neither uninteresting nor irrelevant.

The English translation of an old 'Account of Shahaji and his son, Shivaji,' which was among the records preserved in the fort of Rāigadh is printed in the first volume of [Sir] G. W. Forrest's 'Selections from the Letters, Despatches and other State Papers preserved in the Bombay Secretariat (Marāthā Series).' This document contains a curious passage which is not without bearing on the matter before us :

"Shivāji himself went and plundered Sūrat where a great deal of property fell into his hands. Shivāji then wrote a letter to the King [*scil.* Aurangzeb] to the following effect : "That he had chastised his maternal uncle, Shāhiste Khan, that he had plundered his city of Surat (*Surat ra bé Surat kard*), that he had no right to Hindustan, which belonged to the Hindus, and that he had no right to the Deccan, which belonged to the Nizāmshāhi government, of which, he, Shivāji, was the vazir" (*Op. cit.*, I, 18).

Now there would be no point in the phrase صورت را بیصورت کردم, 'I made Sūrat *biṣūrat*' (*i.e.* ugly, featureless, deformed), unless the name of the town was written with a ص, and the fact that Shivāji or rather his Munshī permitted himself to indulge in this verbal conceit indicates that the spelling صورت was looked upon as fairly consonant with orthographic usage.

But this is not the only instance of the pun on Sūrat and عورت. There is, in the *Ṭabaqāt-i-Akbarī* of Niẓāmu-d-dīn Aḥmad, a passage which shows that the *jeu de mot* is as old as the days of Akbar and that, on one occasion, the Emperor himself "probed a question of policy with a play upon the words." After describing at some length the fort of Sūrat and the siege operations of 980 A.H., the historian says :

"The wretched disloyal Hamzabān and all the people in the fort sent out Maulānā Nizāmu-d-dīn Lārī....to sue for quarter. The Maulānā was conducted to the royal tent, and made his plea for mercy through the *amīrs* and officials. The chief *amīrs* reminded His Majesty that the batteries had been advanced very forward, and when they saw that he was inclined to mercy, they remarked that the garrison had resisted and fought with all their might so long as they had any power,

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[1] Bishop Heber writes: "Surat, or as the natives pronounce it, Soorut (beauty), is a very large and ugly city, with narrow winding streets." Narrative of a Journey through the Upper Provinces of India, Ed. 1849, Vol. II. 122.

and now that they saw that the fall of the place was imminent; they were ready to beg for mercy. His Majesty in his gentleness and humanity granted the petition." Thus far I have abstracted from Dowson's version. (Elliot and Dowson, V, 349.) In the original, the Emperor is said to have repeated, while rejecting the advice of his nobles and complying with the request of the besieged, the following lines which have been left out by the translator :—

بدي را مكافات كردن بدي بر اهل صورت بود بخردي

بمعنى كسانى كه پى برده اند بدي ديده و نيكوئي كرده اند

Ṭabaqāt-i-Akbarī, Lakhnau Lithograph, p. 298, ll. 9-10.

"To return evil for evil is wisdom in the eyes of *those who see only the outsides of things* (اهل صورت). Those who penetrate their inner meaning have, however, done good after witnessing evil."

This is the literal and original sense of the verses, but it is clear that there is a *double entendre* in the first couplet which is susceptible of another interpretation also : "To return evil for evil to the *people of Sūrat* (اهل صورت) would be want of wisdom (بخردي *i.e.* بيخردي). Those who penetrate the inner meaning of things have done good after witnessing (*i.e.*, experiencing) evil."

It will be seen that the felicity of the quotation and its "topical application" depend on the resemblance in sound between Sūrat and صورت, and the double meaning of the phrase اهل صورت.

All this is interesting and not devoid of significance, but it does not provide the sort of evidence which we should like to possess. What is required is the occurrence of the form صورت in a contemporary document or record of which the authenticity and the date cannot be impugned. Such a thing is not easily found, and it must be therefore matter for congratulation that a record satisfying these conditions is actually in existence. This is no other than the 'Grande Inscription de Qandahār' to which I have already referred in the note on Bangāla. The epigraph is, as I have said, in two parts. In the first, there is a rough description of the boundaries of Akbar's empire; in the second, a long catalogue of the towns, cities and famous fortresses of Hindustān. There are in this list about one hundred and six names beginning with 'Udisa and Jaganāt' in the east, and ending with 'Umarkot (عمر كوت) and Tatta (ٹٹھہ) in the west. The principal towns in Gujarāt are there enumerated as follows :—

بندر صورت بروج برودة محمد اباد کنبایت دیو جونا گر نوانگر جام
کچ کنگار احمد اباد ایدر پتن نهر واله *

Journal Asiatique, 1890, pp. 206, 221 and 230. See also Beames, J.R.A.S., 1898, p. 801.[1]

Here then we have something tangible which proves that صورت is a form having fairly good traditional support. Mīr M'aṣūm who composed and wrote out the inscription was not only a man of culture and learning, but was personally acquainted with Gujarāt. He was himself one of the most famous calligraphers of his time, and had in his service a number of skilful engravers capable of transferring his elegant penmanship to stone. Such a man was hardly likely to write صورت on a monumental record with which he had taken such pains and which took, as he himself tells us, no less than four years to complete, if the spelling was held in his day to be inadmissible by those who were competent to form a judgment in such matters.[2]

There is another point connected with this coin about which a few remarks may be permissible. This is the name of the *Ilāhī* month on the reverse. Mr. Whitehead has pronounced the opinion that it also is "incorrectly spelt," and that it is "probably intended for Ābān." (Panjāb Museum Catalogue, Introd. lxxxiii.)

I submit that the suggestion will hardly bear examination,

[1] When Mirza Muḥammad Taqī made his copy in 1889, the first three letters of بندر had been obliterated and the terminal ر only was visible. The whole word could be read clearly when Mohan Lāl made his transcript in 1834 and has been restored from it. *Journal Asiatique*, 1890, p. 230.

[2] Mīr M'aṣūm belonged to a family of Tirmizī Sayyads settled in Bhakkar and was well known as a poet and historian. "Poverty compelled him to leave for Gujrat" where he was introduced to Niẓāmu-ddīn Aḥmad, then Dīwān of the province. "Nizām was just engaged in writing his historical work, entitled *Ṭabaqāt-i-Akbarī*, and soon became the friend of Mīr M'aṣūm, who was likewise well-versed in history..... In the 40th year, he was a Commander of 250. Akbar became very fond of him, and sent him in 1012 as ambassadar to Irān, where he was received with distinction by Shāh 'Abbās..... From the Akbarnāmah (III, 416, 423, 546), and Bird's History of Gujrāt (p. 426), we see that Mir M'aṣūm served in 992 (end of the 28th year) in Gujrāt, was present in the fight of Maisānah, and in the final expedition against Muzaffar in Kacch..... Mir M'aṣūm was also skilled as a composer and tracer of inscriptions, and the *Riyāzush-shu'arā* says that on his travels he was always accompanied by sculptors. From India to Isfahān and Tabrīz,.....there are numerous mosques and public buildings which he adorned with metrical inscriptions. Thus the inscriptions over the gate of the Fort of Āgrah, on the Jām'i Mosque of Fathpūr Sikrī, in Fort Mandū.....are all by him." Blochmann, *Āīn.*, Trans., I, 514-5. See also Proceedings, Asiatic Society of Bengal, 1874, pp. 174-5 and 209.

as the جان is unmistakably clear on the plate (P.M.C., Pl. XVIII, No. 355). I venture to say that what the die-cutter wrote or meant to write was مهر جان, an alternative or indifferent form of مهر which finds mention in the *Akbarnāma*, and is recognised also by the Persian lexicographers. In his 'Account of the Establishment of the New and Divine Era,' Abūl Faẓl gives the names of the thirty days of the *Ilāhī* month, and states that the name of the 16th day (which was also that of the 7th month) was '*Mihrgān* or *Mihr*. (*Akbarnāma*, Tr. Beveridge, II, 16, Text, II, 10.)

Now مهر جان is only the Arabicised form of مهرگان as there is no گ in the Arabic alphabet. مهر جان is, therefore, in reality identical with مهر , *i.e.* the seventh month. Witness the definition in the *Burhān-i-Qāṭ'i*.

مهر جان با جیم بر وزن مهربان معرب مهرگان ست * * * مهرگان با کاف فارسي بر وزن و معنی مهر جان است که معرب آنست و آن بمعني مهر و محب پیوستن است و نام روز شانزدهم از هر ماه و نام ماه هفتم از سال شمسی باشد و آن بودن آفتاب عالمتاب است در برج میزان که ابتدای فصل خزان است *

"*Mihrjān* with *jīm*, of the same measure as *Mihrbān*, is the Arabicised form of *Mihrgān*..... *Mihrgān* with the Persian *Kāf* (*i.e. Gāf*), of the same measure and having the same meaning as *Mihrjān*, which is its Arabicised form. It means 'love' and 'the attachment of friendship.' [It is also] the name of the 16th day of every month, and the *name of the 7th month of the solar year*, and that is coincident with the stay of the world-illuminating sun in the constellation of the Balance and the commencement of the season of autumn."

The *Ghiyāṣu-l-Lughāt* says:—

مهرگان بالکسر وکاف فارسي نام ماه خزان و آن مدت ماندن آفتاب ست در برج میزان *

مهر جان بالفتح و رای مهملهٔ مفتوح معرب مهرگان *

"*Mihrgān* with *Kasr* (or *zer*), name of the autumnal month, and that is the period during which the sun remains in the constellation of the Balance.

Mihrjān with *Fath* (or *zabar*), and the 'rā' also with *Fath* (or *zabar*), Arabicised form of *Mihrgān*."

We may take the net result of this discussion to be that the coin is genuine, and that the doubts which have been

entertained on account of the spelling of the name of the town are not well founded. It is true that the prevailing form is سورت, and good Persian writers generally adhere to this as the more correct form, but the rule is not without exceptions, and the other form with the initial ص is neither unaccountable nor inadmissible. The rupee was probably struck in the seventh month (Mihr) of the 38th year, and would seem to be a proof-pattern or trial-piece which, for obvious reasons, did not meet with approval. It is certainly curious that Mr. Pannā Lāl's coin is not only square, and bears exactly the same legends, but is of the same year and of the month immediately following (*Ābān*).

The College, Junāgadh. S. H. Hodivālā.

Sahrind and Sarhind.

I have said that صورت is another or alternative form of سورت which is admissible, but is generally held to be less correct. Similarly, we have the double form سرهند or سهرند. The name of the town would seem to be written in *both* ways in the manuscripts of the works of Badāonī, and Abūl Faẓl and other historians on which the *Bibliotheca Indica* editions were based.[1] The same diversity is observed on the coins. On the Muhrs and Dāms of Akbar the spelling is always سرهند. On the rupees of Aurangzeb and "all the succeeding Emperors as far as 'Ālamgīr II," the mint-name is written سهرند. Khafī Khān informs us that it was Shāh Jahān who first set the seal of *official* sanction on the latter form, and at the same time enables us to realise the idea at the back of the Emperor's mind.

بر دانشمندان نکته سنج ظاهر باد که سهرند را سابق سرهند مي نوشتند و فی الواقع تا سهرند در سلطنت غزنویه بود یعنی بتصرف سلاطین غزنوي بود اسم سرهند اسم با مسمي گفته مي شد بعده که فرمان روایان ممالک محروسهٔ هندوستان سر اطاعت و فرمان بري درگاه آسمان توامان نهادند بلکه

[1] We have سهرند in *Āīn*, Bibl. Ind. Text, I, 369, 515, 549 and *Akbarnāma*, *ib.*, II, 31, 32, 66, 75, 99, 113, 114, 121; III, 249, 345, 346, 372, 468, 578, 647, 696, 747, but سرهند in *Āīn*, I, 527, 528 and *Akbarnāma*, III, 501. The Bibliotheca Indica text of Badāonī's *Muntakhab* has سهرند on I, 248, 286, 288, 290, 309, 332, 375, 385, 427, but سرهند at I, 306, 405, 459, 460 and II, 14, 42, 91, 155, 187, 210, 266, 293, 312, 323, 381 and 389.

نام و نشان دیگر فرمان فرما نمانده و تا آن طرف کابل و قندهار در قلمرو لا یزال سلطنت هند در آمد حضرت اعلی فرمودند که سهرند می نوشته باشند *

Muntakhabu-l-Lubāb, Bibl. Ind. Text, I, 402, ll. 10-16.

"May it be evident to critical and discerning persons that in former times Sahrind [سهرند] was written Sarhind [سرهند] and, as a matter of fact, the empire of the Ghaznavides extended only as far as Sahrind, and so much only was in their possession. Therefore the name Sarhind [*lit.* end or head or frontier of Hind] was an appropriate designation (*lit.* 'a name expressive of its qualities, *Steingass*). Afterwards, when the rulers of all the territories comprised (*lit.* guarded, protected) in Hindūstān set the foreheads of submissiveness and obedience on the Celestial Court [of the Mughal Emperors], nay, when the name and fame of no other sovereign remained, and Kābul and even Qandahār in the north (*lit.* in that direction, or on the other side of Sarhind) were included in the eternal Empire of Hindūstān, Ḥaẓrat-i-A'alā (*i.e.* Shāh Jahān) issud orders that the name should be written Sahrind [سهرند]."

In other words, سرهند means in Persian 'head, end or frontier of Hind,' and so long as the dominions of the Dehlī Sulṭāns did not extend much further, the name was not inappropriate. But when, as in the days of Akbar and Jahāngīr, the Empire of Dehlī stretched so far beyond that city as to include not only the districts now constituting the North-West Frontier Province, but even Afghānistan, Sar-hind became a palpable misnomer, and the Emperor issued instructions for spelling the name in such a way that any such 'striving after meaning' would become impossible.[1]

No coins of Shāh Jahān from this mint have been yet found, and we have no means of verifying Khāfī Khān's statement so far as his reign is concerned.[2] But the coins of Aurangzeb, etc.,

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[1] "The name *Sarhind*, or 'frontier of Hind' is popularly said," writes Cunningham, "to have been given to the city.....when it was the boundary town between the Hindus and the later Muhammadan Kingdom of Ghazni and Lāhor. But the name is probably much older, as the astronomer, Varāha Mihira, mentions the *Sairindhas*..... The *Sairindhās* or people of *Sirindha*... ..must have occupied the very tract of country in which the present Sarhind is situated and there can be no doubt that the two names are the same." Ancient Geography of India, 145-6. The 'Sairindha' country is also mentioned in Alberūnī's India Sachau's Translation, I, 303. According to the Imperial Gazetteer, "Sahrind is said to mean the 'lion forest,' but one tradition assigns its foundation to Sāhir Rao, a ruler of Lahore, 166th in descent from Krishna, and Firishta implies that it was the eastern limit of the Kingdom of Jaipāl, the Brāhman King of Ohind." Ed. 1908, XXIII, 20

[2] Mr. H. A. Rose has published some letters addressed by Jahān Ārā Begam, Shāh Jahān's favourite daughter, to Budh Prakāsh, the Rāja of Sirmūr. In one of these dated 21st Rabī II, 18th Julūs,

prove that the orthographic innovation which he had introduced did not fail to appeal to the understanding of his descendants.

I may add that the name of the town is written in the new way only by the authors of the *Bādishāhnāma* (*Bibl. Ind.*, Text. I. i, 215, 216, 230, 409; I, ii, 8, 9, 71; II, 115, 116, 121, 134, 206, 236, 247, 319, 412). *'Ālamgīrnāma* (*Ibid.*, 126, 142, 166, 219, 220, 759, 765, 848), and the *Maāṣir-i-'Alamgirī* (*Ibid.*, 42, 86, 132 and 209).

It is perhaps necessary to add a word of warning. Khāfī Khān's words do not mean that the form سهرند was first introduced or invented in the reign of Shāh Jahān. All that he really says is that he was the first to set the seal of Imperial sanction on that mode of spelling, and that he ordered the name to be so written in the State Records.

As a matter of fact, سهرند occurs occasionally in manuscripts of undoubted antiquity, *e.g.* Colonel Hamilton's MS. of the *Āīn-i-Akbarī* (see Bibl. Ind. Text. I. 27, footnote 8), of which the exact date is not known, but which, in Blochmann's opinion, was "written in the reign of Akbar or that of Jahāngir" ((*Ibid.*, Preface, p. 1).

We may take it for certain that the form is as old at least as the reign of Akbar. The following extract from a manuscript of the *Haft Iqlīm* of Amīn Aḥmad Rāzī, who visited this country during that Emperor's reign, and finished his work in 1002 A.H. (1592 A D.) is absolutely decisive on the point.

سر هند که بسهرند نیز تغیر کرده اند سابق داخل سامانه بوده سلطان فیروز شاه آنرا جدا ساخته سرکاري گردانیده و حصاري در آنجا بنا فرموده موسم بفیروز آباد سهرند امروز بجهت نزهته و صفا و باغات دلکشا جای معروف و مشهور ست *

"*Sarhind, which has been altered also to Sahrind*, was formerly included in the Sāmāna [division] Sulṭān Firoz Shāh separated it [from Sāmāna] and constituted it a *Sarkār* by itself, and built there a fortress called Firūzābād. In these days (*lit.* to-day) Sahrind is a famous and well-known place on account of its beauty, purity [of the air] and its charming gardens." (Third *Iqlīm*).

S. H. Hodivālā.

Junāgadh, January, 1918.

Shergarh.

Two early rupese of Akbar from a mint named Shergarh are known. They are dated 964 and 966 A.H. Shergarh

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" Dawar Khān, the Faujdār of *Sahrand*" is mentioned (Journal of the Asiatic Society of Bengal, 1911, p. 453), and the name is clearly written سهرند in the original. *Ibid.*, p. 450, l. 13. This goes some way towards corroborating Khāfī Khān's statement.

occurs frequently, in several cases as an alternative name on the coins of the Sūr dynasty, and fortresses built by Sher Shāh *near* Dehlī, Bhakkar, Rhotās in Bengal and Qanauj were all given the name of Shergarh.

It is not easy to say where the Shergarh of these issues of 964 and 966 A.H. was situated. Bhakkar may, with good reason, be put out of court on the ground that it was taken by Akbar only in 981 A.H. Dehlī also may be eliminated as we have rupees of *Hazrat*-i-Dehlī of 964 A.H. (I.M.C., III, No. 180) and Dāms of Dehlī alone with the date 966 (*Ibid.*, No. 391). Mr. Whitehead has suggested that "the Shergarh of Akbar's coins was probably in Bengal" (P.M.C. Introd., lxxxviii). I beg permission to point out that this is extremely unlikely, as the Eastern Provinces were then in the hands of the Afghāns and were not incorporated in the Mughal Empire before 981-2 A.H.

We have then to consider Qanauj. The following passages from the *Tabaqāt-i-Akbarī* and *Badāonī's Muntakhab* have a clear bearing on the matter, but have not, so far as I know, been quoted or referred to by any previous writer.

"Upon arriving at Āgra, the Emperor was informed that Khān Zamān was besieging the fort of *Shergarh, four koss distant from Kanauj*, in which fort Mirzā Yūsuf Khān was shut up .... When he [*scil.* the Emperor] reached the *pargana* of Saket, 'Alī Kulī Khan [*i.e.* Khān Zamān] decamped from before Shergarh, and fled to his brother, Bahādur Khān, who was in Mānikpūr." (E.D.V., 319; *Tab. Akb.* Lakhnau Lithograph, 279, ll. 14-17). Lowe's translation of the corresponding passage in Badāonī is as follows:—

"When the Emperor arrived at Āgra news came that Khān Zamān was besieging Mīrzā Yūsuf Khān Mashhadī who had shut himself up in *Shergarh which is generally known by the name of Qannouj* .... And when the town of Sakīt had become the camping-place of the imperial army, news came in that Khān Zamān had raised the siege [of Shergarh], and fled towards Mānikpūr, where was his brother, Bahādur Khān." *Op. cit.*, II, 96; *Bibl. Ind.* Text, 94, ll 2-13.

Once more Badāonī tells us that "in the month of Jamāda'l-ākhir, while the camp was at *Shergarh (otherwise called Qannouj)*, a book called *Singhāsan Battīsi*, which is a series of thirty-two tales about Rājah Bikramājīt, King of Mālwa, and resembles the *Tūṭīnāmah*, was placed in my hands; and I received his Majesty's instructions to make a translation of it in prose and verse." *Ibid.*, 186; Text, 183, ll. 17-21.

The siege of Shergarh-Qanauj is put by both writers into 974 A.H. and the Translation of the Thirty-two Tales about Vikrama was entrusted to Badāonī in 982 A.H. It follows that Qanauj was popularly known as Shergarh down at least to the year 982 Hijrī, and we may see in the fact grounds for assigning these rupees to the Qanauj mint. On the other

hand, it appears from I.M.C., Nos. 514-6 that the Akbarī *alias* of the town was Shāhgarh and not Shergarh in 968, 969 A.H. But to this it may be replied that the transition from Shergarh to Shāhgarh may have taken place *after* 966 A.H., and that Niẓām-ud-dīn Aḥmad and Badāonī may have been ignorant of it or may have taken no cognizance of it on account of the older name being still in *greater* vogue. Besides, there are some instances of the reappearance of the old name *on coins* even after a new name had been introduced. [It is very probable that the change to Shāhgarh occurred in 957, but that after the defeat of Muḥammad 'Ādil the old name was resumed. Ed.]

I ought perhaps to add that there are several other places called Shergarh in India. Abūl Faẓl mentions four *maḥāls* of that name in the *Āīn*. Two of them were in the Ṣuba of Bengal (Jarrett, Trans., II, 141, 144) and may, for the reason mentioned, be rejected at once. The third was in the Beth (or Bist) Jālandhar Duāb of the Ṣūba of Lāhor, but it could not have been a place of any importance as its revenue was only 194294 Dāms, or less than five thousand Rupees. The fourth was embraced in that portion of the same Duāb which was, for fiscal purposes, included in the Suba of Multān. This place has been identified with "a village about five miles north of Mailsī, founded in the time of the Emperor Sher Shāh, and still showing ruins of its former prosperity" (E. D. Maclagan, Abul Fazl's Account of the Multan Sarkar, in J.A.S B., 1901, Pt. I, p. 3.) This appears to have been a place of much greater consequence, as its revenue was 5,741,200 Dāms (1,43,530 Rs.), but it can hardly stand comparison with Qanauj in any respect.

Shergadha, "a dependency of Jahnī," in the Panjāb is thrice alluded to by Badāonī as the residence of "Shaikh Dāūd Qādirī Jahnīwāl, the greatest Pole Star, the master and asylum of Sainthood." (Lowe, II, 159, 160.) But it does not otherwise appear to have been a place of any note.

Thornton mentions a 'Sheregurh' in the "British district of Bareilly, on the route from Bareilly to Almora, 20 miler north of the former. Lat. 28° 40′ N. Long. 79° 27′ E." Anothes place of the same name is said to be "in the Rajpoot State of Jeypoor, 74 miles S.E. by S. from Jeypoor and 121 miles E. by S. from Ajmeer, Lat. 26° 2′ N., Long. 76° 35′ E." (Gazetteer, New Edition, 885.)

There is a Shergurh in Jodhpūr which is marked in Constable's Hand Atlas (Pl. 27 *A*, *b*) as well as in Keith Johnstone's Atlas of India (Pl. 5 *E*, *f*). See also Imp. Gazetteer, ed. 1908, XIV, 188, 191). Another homonymous locality is in "the Chhāta tahsil of Mathura district, N.W.P., Lat. 28° 46′ N., Long. 77° 39′ E., on the right bank of the Jamnā, 8 miles northeast of Chhāta town. The town derives its name from a large

fort now in ruins, built by the Emperor Sher Shah." (Imp. Gaz., ed. of 1887, XII, 380.) This place was visited by Peter Mundy in 1631. He calls it 'Shawgurr,' and says it was 8 course [Koss] from Cole [Koil, *i.e.* 'Alīghar]. It seems to have been a depot for Saltpetre, and he purchased there 400 fardles [about 2,000 maunds] of "the best Saltpetre that is transported out of India to Christendome." (Travels of Peter Mundy, ed. Sir R. C. Temple, Hakluyt Society Edition, II, 76.)

Tieffenthaler notices a 'Scherghar,' three miles south-west of Narvar and says it was "entouré de bonnes fortifications (*firma arce*)." Description de l'Inde, I, 182. This place was held in jāgīr by the Bhopāl Bourbons, and they are said to have fled to it from Dehli on the sack of that city by Nādir Shāh. 25°35′ N, 77°58′ E. (Imp. Gaz., ed. 1908, XIII, 324).

Lastly, there is the "ruined fort of that name in the Sāsarām Subdivision of Shāhābād District, Bengal, situated in 24° 50′ N., 83° 44′ E., 20 miles south-west of Sāsarām town. The spot was selected by Sher Shāh as the site of a fortress soon after he had begun strengthening Rohtāsgarh, which he abandoned on discovering the superior advantages of Shergarh." (Imp. Gaz., Ed. 1908, XXII, 272.) But this Shergarh as well as Rohtāsgarh came into Akbar's possession only in 984 A.H. (Beveridge, *Akbarnāma*, Trans., III, 265-6; Badāonī, Trans., Lowe, II, 185), and it is not likely that any coins could have been struck there in 964 or 966 A.H.

The other places of the same name are not so easily dismissed, though there is this to be said against the Shergarh in Jaipūr and Jodhpūr that Akbar's authority or suzerainty had been hardly acknowledged at that early period in that part of Hindustān. Shergarh near Chhāta town in Mathura district and Shergarh near Narwar may have been places of considerable portance in the latter half of the 16th Century, but we unfortunately know little or nothing about them.

In these circumstances, anything like an absolutely conclusive or satisfactory identification is not to be expected. The most that can be said is not that any particular identification is certain, but that it is more probable than, as probable as, or less improbable than, some other. After looking at the matter from all points of view, it seems to me that the claims of Qanauj are at least as good as, and not inferior to those of any of the other places mentioned in this note. At the same time, they are not so incomparably superior to those of its competitors as to entitle us to give a definitive verdict in its favour.

Junāgadh. S. H. Hodivālā.

Ẓafarnagar.

One of the unassigned mints of the Mughal Emperors of India is that of Ẓafarnagar. "I am not aware," says Mr. Nelson

Wright, "of the exact locality of this mint-town. Dr. Codrington in his 'Musalmān Numismatics' identifies it with Fatḥābād in the province of Āgrā.[1] The references to the place, however, in the chronicles of Jahāngīr's, Shāhjahān's and Aurangzeb's reign (see E.D., VII, pp. 37 and 315; also Blochmann's *Āīn*, p. 503) seem to leave no doubt that the Ẓafarnagar of the coins is the town of that name in South India, south of Aḥmadnagar." (I.M.C., III, Introd., lxxxii.) The reason given for ruling out Fatḥābād is good, if not absolutely conclusive, but Mr. Nelson Wright's own suggestion is not very helpful nor unassailable. In the first place, it is not possible to find in any modern Indian Atlas (neither Constable's nor Keith Johnston's, nor that accompanying the New Imperial Gazetteer), a "town of that name in South India" marked at all. In the second, it will be seen on examining the three passages relied upon, that there is nothing whatever in them to warrant the statement that Ẓafarnagar was situated to the *south* of Aḥmadnagar.

Where then are we to look for this town which the earliest coin is an undated Rupee of the reign of Jahāngīr? (P.M.C., No. 1034.) An examination of the original Persian authorities shows that there is no lack of references in them to a town of that name in the Dekkan, but there is, in by far the greatest number of them, little or nothing that is useful in determining its exact situation. The earliest direct mention with which I am acquainted is in the *Tūzuk-i-Jahāngīrī*, but all that can be learnt from it is that Ẓafarnagar was somewhere in the Bālāghāṭ. (Sayyad Aḥmad Khān's Edit., p. 381, l. 24; Rogers and Beveridge's Trans., II, 296; XIX R.Y., 1033 A.H.) There is a similar passage in the *Iqbālnāma-i-Jahāngīrī*, but it adds nothing to our knowledge (p. 217, l. 8). The name occurs no less than eight times in the *Bādishāhnāma* of 'Abdul Ḥamīd Lāḥorī (*Bibl. Ind.* Text, I, i, 501, 505, 517, 532; I, ii, 35, 36, 68, 278), but all that can be gathered from these passages is that the place was somewhere near Daulatābād (I, i, 501 and 505), as well as Rohankhera (I, i, 517) and Aḥmadnagar (I, ii, 36), and that when the prince Shujā'a resolved upon investing Parendā, he placed *thānas* or military garrisons

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[1] Fatḥabād is a very common place name, but there can be little doubt that the town meant is the 'Fattihabad' of which Sir H. Elliot says that it was "known also by the name of Zafarnagar," and "was included in the Haveli of Agra and formed part of the Tappa of Shamsabad." He further states, and it would be difficult to quote a higher authority on such a question, that it was "founded by Aurangzeb in 1067 A.H. in commemoration of the victory obtained by him over his brother, Dara Shikoh." (Memoirs of the Races of the North-Western Provinces of India, Ed. Beames, II, 87).

The coins are of the reigns of Jahāngīr (undated) and Shāh Jahān (3 R, 5 R, and 1043 A.H.), and could not possibly have been struck at the Zafarnagar or Fatḥabād 'founded by Aurangzeb.'

at Ẓafarnagar, Jālnāpūr, Shāhgaḍh and Bhīr for protecting the convoy of grain and fodder from Burhānpūr to Parendā. (I, ii, 35.). Khāfī Khān also twice mentions Ẓafarnagar (*Bibl. Ind.* Text, I, 489; II, 293) but tells us really nothing more than that Rāmgīr was a *t'aluqa* in the King of Gulkanda's Suba of Ẓafarnagar. (E.D., VII, 315-6.). The solitary reference in the *'Alamgīrnāma* is scarcely more illuminating. It gives us only the name of the person (Wazīr Beg, Irādat Khān) who was appointed Qil'adār of Ẓafarnagar in the third year of Aurangzeb's reign (*Bibl. Ind.* Text, 567). A careful scrutiny of the *Maāṣiru-l-Umarā* discovers no less than fifteen passages in which Ẓafarnagar is alluded to. Twelve of these can be traced to the *Bādishāhnāma* or some of the other authorities already cited and teach us nothing new. (*Bibl. Ind.* Text, I, 186, 718, 743; II, 64, 261, 794; III, 6, 385, 401, 403, 443, 739.) But there are three others which are exceedingly helpful and deserve to be quoted in the original. In the first of them, we are informed that in 1030 A.H., Rāja Bikramājīt razed to the ground the new town built by Malik 'Ambar at Kharkī (near Daulatābād), and that 'Ambar was obliged to make a humiliating peace with the Mughals. . . . . و قرار یافت که

راجه با جمیع عساکر بقصبهٔ تمرني معاودت نموده متوقف شود راجه حسب الحکم شاهي متصل قصبهٔ مذکور بر کنار رودخانهٔ مشهور بکهرک پورنا سر زمینی پسندیده در غایت استحکام قلعهٔ از سنگ و آهک اساس نهاد و آنرا بظفر نگر موسوم ساخته بوشکال درآن مکان گذرانید *

Maāṣiru-l-Umarā, II, 191-2.

"And it was settled that.....the Rāja should return to the Qaṣbah of Tamarni with the entire army and stay there. The Rāja in accordance with the Shāh's [*i.e.* Prince Shāh Jahān's] commands, selected a spot in the vicinity of the abovementioned Qaṣbah on the bank of a river known as the Gharak-Purnā, and laid the foundations of an exceedingly strong fortress of stone and mortar. He gave it the name of *Ẓafarnagar*, and spent the rainy season in that place."

In the second passage, we are again informed that "this (قصبهٔ تمرني) Qaṣba of Tamarnī is *at present* spoken of as *Ẓafarnagar*," الحال بظفر نگر زبان زد است (III, 437, l. 20). Lastly, we are told in the biographical account of Muṣṭafā Khān Khwāfī that "in the thirtieth year [of the reign of Shāh Jahān] he was distinguished by being appointed to the governorship of the fortress of *Ẓafarnagar*, which is included in (*lit.* related to) the Bālāghāṭ of Berār, and is *situated at a distance of twenty-eight koss from Aurangabād.*"

در سال سیوم بحراست قلعهٔ ظفر نگر مضاف بالاگهاٹ برار که بیست و هشت کروهي اورنگاباد واقع است اختصاص یافت

(III, 516, ll. 16-19.)

The gist of all this is that a fortress was erected in A.H. 1030 by the Rāja Bikramājīt at Tamarnī, a qaṣba or township situated at a distance of 28 koss from Aurangābād on the banks of the Gharak-purna, and called Ẓafarnagar.

This is so far satisfactory, but then it may be argued that the *Maaṣiru-l-Umarā* is not a contemporary authority, but a modern compilation. I am therefore happy to say that it has been possible to trace the statement to its source. This is the *'Amal-i-Ṣāliḥ* or *Shāhjahānnāma* of Muḥammad Ṣāliḥ Kambū, a voluminous but most valuable chronicle in which not less than 210 pages are occupied by an account of Shāh Jahān's life from his birth to his accession. At p. 159 we read :—

و بندهای پادشاهي چون عنبر را بر وفق خواهش هواخواهان مطیع و فرمان بر یافتند خاطر از جمیع مواد جمع ساخته همعنان فتح و ظفر با سائر عساکر بسوي تمرني شتافتند و چون محال بالا گهاٹ قلعهٔ که قابل نشستن مرزبان و بنگاه لشکر و نشاندن تهانه باشد نداشت و قلعهٔ احمد نگر خود در سرحد واقع شده از وسط ولایت دور افتاده بود لاجرم اولیای دولت در سر زمینی پسندیده که این طرف تمرني واقع بود بر فراز رود خانهٔ کهرک پور قلعهٔ سنگین اساس در کمال رفعت و حصانت بنا نهاده در اندک فرصتی آن حصین را باستحکام تمام صورت اتمام دادند و بنابر مقتضاي وقت و مقام بظفر نگر موسوم ساخته حسب الحکم عالي امراي عظام بافواج خود در مواضع مذکورهٔ ذیل باین دستور گذرانیدند داراب خان و راجه بکراماجیت با هشت هزار سوار در ظفر نگر عبد الله خان در مقام اره که شش کروه این طرف ظفر نگر واقع است و خواجهٔ ابو الحسن در مواضع پاپلی دو کروهي اره و سردار خان برادر خان مذکور در دیو لگام نزدیک برو هنیگر

(*Bibl. Ind.* Text, 159, ll. 7-20.)

"When the Imperial officers (*lit.* servants) found [Malik] 'Ambar disposed to be as dutiful and submissive as the hearts of all loyalists could desire, their minds were made easy on all

scores, and they hastened towards Tamarnī with all the forces, accompanied by (*lit.* riding side by side with) victory and triumph. And as the district of Bālāghāṭ possessed no stronghold fit to be the headquarters of a governor, the camp of an army or for the establishment of a *thānā*, and as the fortress of Aḥmadnagar was situated on the very outskirts of the district and at a great distance from its centre, the Imperial officers laid the foundations of a substantial fortress of great height and strength in a chosen spot *on this side of Tamarnī and on the bank of the Gharakpūr* [*nā*]. The fortification was completed in a short time, and it *was named Ẓafarnagar* fittingly with the time and place. Then the great nobles spent [the rainy season] in the following places with their forces in accordance with the exalted commands: Dārāb Khān and Rāja Bikramājīt with 8,000 horse in Ẓafarnagar, 'Abdulla Khān in the locality of Arrah which is six koss on this side of Ẓafarnagar, Khwāja Abūl Ḥasan in Palpli, two koss from Arrah, and Ṣardār Khān, brother of the said Khān in Deulgām near Rohanikher."

It is clear that Ẓafarnagar is to be looked for in the close proximity of Tamarnī and the river Gharak-pūrnā. Now I find in the Official Gazetteer of Aurangābād District the statement that Temburni is "a place of some importance 5 miles south of *Jafarābād* and is surrounded with a strong wall" (p. 848). As for this Jafarābad, we are told that it is the chief town in the Jāgīr of that name in the Bhokardan T'aluq of Aurangābād District. It is "situated at the confluence of the Purnā and Kailnā rivers in lat. 20° 11′ 35″ North and long. 76° 3′ 35″ East. It is a large and populous town, surrounded by a fortified stone wall, now in a very dilapidated state, but a small stone gaddi (fort) inside is in fair order..... There are seven masjids and temples in the town, and the principal mosque has a Persian inscription recording its construction under the orders of Aurangzeb, by Rizazath (*sic*) Khān[1] in 1076 Hijri (A.D. 1664)." A large handsome cistern within the fortification has also an inscription which states that it was erected under the orders of Shāh Jahān by Mustafa Khan Turkoman in 1040 (A.D. 1630)." *Ibid.*, p. 847.

Let us now hear what Thornton has to say about the place.

"Jafferabad in Hyderabad or Territory of the Nizam, a

[1] *Rizazath* Khān is an impossible name. I have no doubt that رزازت is a misreading of ارادت. We know that Wazīr Bēg, *Irādat* Khān, who had been implicated in the rebellion of Prince Muḥammad Sulṭan and had been in disgrace in consequence, was pardoned and restored to favour on the *Jashn* of Aurangzeb's 44th birthday, and appointed Qil'adār of Ẓafarnagar with the mansab of '1000, 400 horse,' vice Mirzā 'Alī 'Arab=17 Zīqa'ad 1070 A.H. *'Ālamgīrnāma*, 566-7.

town near the north-west frontier towards the British District of Ahmednugger. It is *situated on the river Gurk-poornah*, a tributary of the Godavery, and here a large stream. The town is of considerable size..... Distance from Hyderabad, N.W., 260 miles; from Aurangabad, N.E., 45 miles; from Bombay, N.E., 220 miles. Lat. 20° 14′, Long. 76° 5′." (Thornton, Gazetteer of the Territories under the Government of the East India Company, New Edition, p. 432.)

This settles the matter. According to the *'Amal-i-Ṣāliḥ* and the *Maāṣiru-l-Umarā*, Ẓafarnagar was in the immediate neighbourhood of Tamarnī, on the bank of the Gharak-Purnā and about 28 koss distant from Aurangābād. According to the two Gazetteers, Jafarābād is situated on the 'Gurk-Poornah' at a distance of only 5 miles from 'Temburni,' and 45 miles from Aurangābād. There is besides the evidence of the inscriptions in the mosque and cistern still existing in 'Jafarābād.' They are said to have been built under Imperial orders in 1040 A.H. and 1076 A.H. by the local Governors, Muṣṭafā Khān Turkmān[1] and Irādat Khān respectively. We know from the contemporary historians that the former was Thānadar of Ẓafarnagar in the sixth year of Shāh Jahān (1042 A.H.), and that the latter was first appointed Qil'adār of Ẓafarnagar on the 17th of Ziqa'ad 1070 A.H. There would then seem to be no reasonable doubt that the Jafarābād of the Gazetteers and Atlases is the same as the Ẓafarnagar of the historians.

But it may be still asked "Why then is the place now called Jafarabad"? Of this difficulty also, I have found the solution in a very rare work, 'Gladwin's History of Hindostan during the Reign of Jahangir, etc.' We there read that in 1030 A.H. "Shāh Jehān left a garrison at Kehrkee and then marched to the relief of Ahmednagur. Amber, alarmed at the rapid progress of the Imperial arms,.....sent a message to him with a promise to remove immediately from Ahmednagur, abandon all his conquests and make the most ample submissions to the Emperor. Shāh Jehān insisted that Nizamul Mulk should resign to the Emperor that part of his country which remained unconquered at the conclusion of the last war; and that Adil Khan, Nizam-ul-Mulk and Koteb-ul-Mulk should together pay a peishkush of fifty lacs of rupees. Amber readily acceded to these terms; he immediately raised the siege of Ahmednagur, and his troops joined Shāh Jehān at

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[1] Muṣṭafā Beg had been a servant of Khurram or Shāh Jahān in the days of his princehood, and was ennobled as Turkmān Khān at the accession of his patron to the throne. *Bādishāhnāma*, I, i, 121. He is mentioned as *Thānadār* of Ẓafarnagar in the sixth year of the reign of that Emperor. *Ibid.*, I, i, 505-6. His death in the seventh year (1042 A.H.) is also recorded. *Ibid.*, I, ii, 298. There is an account of the man in the *Maāṣiru-l-Umarā* also (III, 384-5).

Terminee. In consideration of this victory, Shāh Jahān *ordered a stone fort to be built to which he gave the name of Zufferabad.* He stationed garrisons throughout the Dekkan and *during the rains cantoned his army at Zufferabad.*" (*Op. cit.*, Calcutta, 1788, p. 53.)

It is clear that this stone fort built at *Terminee* and called '*Zufferabad*' is no other than the '*Ẓafarnagar*' of the '*Amal-i-Ṣalih* and the *Maāṣiru-l-Umarā*, and the question is 'Where did Gladwin get that form of the name'? Sir Henry Elliot has shown that his work is made up of translations from the first part of the *Tūzuk-i-Jahāngīrī* (the *authentic* recension of the Emperor's Memoirs), and the *Maāṣiri Jahāngīrī* or *Jahāngīr-nāma* of Khwāja Kāmgār Ḥusainy, who is also called Ghairat [or 'Izzat] Khān (Elliot and Dowson, VI, 277-8; see also 252 and 439). Now there is no record of the construction of the fortress in the *Tūzuk* itself, and it is doubtful if Gladwin had actually seen that portion of the 'Memoirs' in which the events of 1030 A.H. are set down. (*Ibid.*, VI, 279). It follows that Gladwin must have derived his information from the *Māaṣir-i-Jahāngīrī*. He is known to have abstracted copiously from that work, of which the author himself informs us that he was "induced to undertake its composition at the instigation of the Emperor Shāh Jahān in the third year of his reign, A.H. 1040" (*Ibid.*, VI. 439.) It would thus appear that the new foundation was even then known by *both* names. Perhaps *Ẓafarnagar* was the strictly official designation; *Ẓafarābād*, the popular name.

It is of course not impossible to argue that the author of the *Maāṣir-i-Jahāngīrī* has made some mistake or that Gladwin has misread آباد for نگر. But any such supposition is negatived by the fact that the place is called 'Zafravad' in the Voyages of Monsieur de Thevenot. In the account of his journey from Bagnagar [Bhāgnagar or Ḥaidarābād] to Sūrat, he says that his companion, M. Bazon [Bazou], parted from him at Patry, as the former had business at Aurangābād and he himself at Burhānpūr. "For my part ..... I took my way by the Towns of Patou, Ner, Chendequer, *Zafravad*, Rouquera, and Melcapour, all of which six are not so good as one of our ordinary cities." A more detailed itinerary of the route from Patry to Brampour [Burhānpūr] is also given and is as follows:—

"The way from Patry to Brampour. To Gahelgaon, 9 coss. Doudna, a river. Patou, a town, 6 coss. Ner, a town, 6 coss. Seonny, 8 coss. Chendequer, a town, 2 coss. Ourna, a river. *Zafravad, a town*, 10 *coss*, Piply, 10 coss. Deoulgan, 6 coss. Rouquera, a town, 6 coss. Melcapour, a town, 2 coss. Nervar, a river. Purna River. Japour, 12 coss. Tapty River. Brampour, a town, 2 coss. The whole 39 leagues and a

half."[1] Travels into the Levant, etc., English Trans., 1686. Part III, p. 107.

It will be observed that Palply [Pīply], Deulgāon and Rohankhera where garrisons are said to have been stationed by Rāja Bikramājit are all clearly located by Thevenot in the neighbourhood of his *Zafravad*. The author of the '*Amal-i-Sālih* says that Palply (Pīply) was two koss from Arrah which was six koss from Ẓafarnagar. The Frenchman informs us that Piply was 10 koss from *Zafravad*. Any one who will take the trouble to find these places on a good map or atlas will have no difficulty in convincing himself that Ẓafarnagar and *Zafaravad* are absolutely identical.[2]

The fact is that the synonymous suffixes *-ābād*, *-nagar*, *-pūr*, *pattan*, and *-garh* or *-kot* were *sometimes* not clearly differentiated in the case of newly-founded towns, or the many capricious and temporary *aliases* or '*Urfs* devised by successive Emperors for old towns. Names like Fatḥpūr, Fatḥābād, Fatḥnagar and Fatḥgarh, Ẓafarpūr, Ẓafarābād and Ẓafarnagar, Islāmpūr, Islāmābād, Islamgarh and Islāmnagar were so common, and so often bestowed *simultaneously* on all sorts of

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[1] Patry (Pāthri) in Parbhānī district, Ḥaidarābād State, Imp. Gaz., ed. 1908, XX, 30-31; Constable's Hand Atlas of India, Pl. 31, D. b.

Doudna (Dudnā), River in Parbhānī, I.G., XIX, 410.

Patou (Partūr), I.G., XX, 31; Constable, 31, D b.

Seouny (Sheonī) in Aurangābād district, Ḥaidarābād State, Constable, 31 D b.

Chendequer (Sindkhed) in Mehkar t'aluq, Buldāna district, Berār, I.G., XXII, 433; Constable, 31, D b.

Zafravad (Jafarābād) in Aurangābād district, Ḥaidarābād State, Constable, 31 D a.

Deoulgan (Deulgāon-Rājā) in Chikhlī t'aluq, Buldāna district, Berār, I.G., XI, 272; Constable, 31 D a.

Rouquera (Rohankhed) in Malkāpūr t'aluq, Buldāna district, Berār, I.G., XXI, 304.

Melcapour (Malkāpūr) in Buldānā district, Berār, I.G., XVII, 91; Constable, 31, D a.

Pourna (Pūrna), I.G., XX, 412.

Japour (Shāhpūr ?), Nimār district, Central Provinces; Constable, 31 D a.

Thevenot landed at Surat on the 12th of January 1666. He left Bhāgnagar or Ḥaidarābād on the 13th of November, 1666. and reached Burhānpūr on the 9th of December of that year. Travels, Part III, 1, 170. He "died at Miana, a little place about thirty leagues from Tauris [Tabrīz], on the twenty-eighth of November, 1667." *Ibid.*, Preface.

[2] The strategical importance of the *thāna* of Ẓafarnagar [Jafarābād] is clearly shown by the fact that the battlefield of Assaye is situated only six or seven miles to the north-west of Jafarābād. The battle which established, by the defeat and death of his rival, Mubāriz Khān, the independence of the first Niẓām of Ḥaidarābād was fought in 1724 at Shakarkhelda or Fatḥkhelda—a village situated about twenty miles to the north-*east* of Jafarābād. Assaye is in Lat. 20° 15′ N., Long. 75° 54′ E. Fatḥkhelda in 20° 13′ N. and 76° 27′ E. Jafarābād in 20° 11′ N. and 76° 3′ E. Grant Duff mentions 'Jaffeirabad' in his description of the battle of Assaye. Bombay Reprint, 1873, p. 572.

places that sometimes one, sometimes another of the suffixes caught the popular fancy and acquired vogue to the exclusion of the original termination.

Thus, Abūl Faẓl tells us that when Akbar founded the great city at Sikrī near Āgra, "H.M. gave it the name of Fatḥ*ābād* and this by common use was made into Fatḥ*pūr*." *Akbar-nāma*, Trans., II, 531. برزبان عالميان بفتحپور اشتهار يافت. (Text, II, 365.) Manucci also speaks of the town as 'Fatea*bād*.' (Storia, I, 132.) The Venetian is not always accurate or reliable, and the statement may be due to some inadvertence or a lapse of the memory, but it is not impossible that he may have picked it up from some person much more correctly informed than himself about Akbar's doings.

Elsewhere, Abūl Faẓl informs us that the Emperor laid the foundations of a fortress on the site of an old city near Amber, and called it Manahar*nagar* (*Akbarnāma*, Trans., III, 311, see also *ib.*, 362). The place is 28 miles N.N.E. of Jaipūr and is now called Manohar*pūr*. It is the *Monoarpur* of Tieffenthaler who says it is 15 leagues north of Jaipūr, and adds that it was a well-known town and possessed a fort. (*Description de l'Inde*, I, 323; see also Imp. Gaz., XVII, 200).[1]

There is the exactly similar case of Jaipūr itself. It is common knowledge that it was at one time called Jai*nagar*, and that form of the name occurs in several Hindu as well as Muhammadan writers. [Harnām Singh, *Sa'ādat-i-Jāwīd* (*c.* 1810) in Elliot and Dowson, VIII, 344; Harsukh Rāi, *Majm'au-l-Akẖbār* (*c.* 1800 A.C.), *Ibid.*, 365, 367; *Maāṣiru-l-Umarā* (1779 A.C.), II, 83; Allahyār Bilgrāmī, *Ḥadīqatu-l-Aqālim*, (*c.* 1776 A.C.), Lakhnau Lithograph, p. 170, l. 7.] It is now known only as Jai*pūr* and the -'*nagar*' has, in this case also, been cast out in favour of -*pūr*. It is also fairly well known that Ghāzīābād in Mīrat district was formerly called Ghazīu-d-dīn-*nagar* (Imp. Gaz., XII, 221), and that the original name of Anūp*shahr* was Anūp*nagar*. (E.D., VIII, 147, 170; Num. Sup., XIX, 410.) There is also the analogous case of Mān*kot* and Mān*garh* (N.S., XXXI, 362-365).[2]

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[1] The name of the town is given as Manohar*pur* by Badāonī. *Bibl. Ind.* Text, 252; Lowe's Trans. II, 259. It is Manohar*gadh* in the Lakhnau Lithograph of the *Ṭabaqāt-i-Akbarī* (p. 339, l. 3), but Manohar-*nagar*, in Dowson's version. Elliot and Dowson, V, 407. We learn from the *Maāṣir-i-'Ālamgiri* that one of the wives of Kāmbakhsh was a sister of Jagat Singh, Zamindār of Manohar*pūr*. *Bibl. Ind.* Text, 211, l. 2.

[2] There are other instances also. Jāfarābād, the chief town of Babriāwād, "derives its name from Sultān Muzaffar of Gujarāt, who built the fortifications; hence the town was called Muzaffarābād, by contraction Zafarabad and Jāfarābād as it is now invariably called." Bombay Gazetteer, Vol. VIII (Kathiāwār), p. 452.

This place is frequently mentioned by the early European travellers. Thomas Best calls it 'Madafeldebar.' (Journal in Purchas, His Pilgrimes,

This does not mean that we are permitted to "regard *-pūr*, *-nagar*, *-garh*, *-pattan* and *-ābād* as always interchangeable. Far from it. We should thereby only create inextricable confusion and make it almost impossible to identify Indian place-names which are, even without any such gratuitous assumption, difficult enough to fix. All that is implied and the utmost that can be conceded is that in a few—probably a very few—cases, some such confusion does appear to have occurred. But those cases form the exception and not the rule, and the exceptions should be recognised only when, as in this instance, satisfactory contemporary evidence is forthcoming.

Junāgadh, 2nd January, 1918. S. H. Hodivālā.

MacLehose's Reprint, IV, 130.) It is also mentioned in the Voyages of Sir James Lancaster, p. 239. Sir Thomas Roe speaks of it as 'Maldafar" (Embassy, Ed. Foster, 94) and "at one time favoured the idea of obtaining the cession of the town from the Mogul with a view to fortifying it and making it the headquarters of the English." Foster, The English Factories in India (1618-1621), 180 *n*.

Similarly, the name of a famous hunting-seat of the Mughal Emperors near Āgra is usually written Samū*garh* (سمو گره) *Bādishāhnāma*, II, 355, 361, 362; *'Ālamgīrnāma*, 111, 112; *Maāṣir-i-'Ālamgīrī*, 7, but the Emperor Jahāngīr always speaks of it as Samū*nagar* (سمو نگر) *Tūzuk-i Jahāngīrī*, Text, 98, 99, 121. 274, 326, 327; Rogers and Beveridge, Trans. I, 202, 203, 248; II, 95, 198, 200. Khāfī Khān has Samū*gadh* (سمو گڈھ) *Muntakhabu-l-Lubāb*, Text, I, 598; II, 22, 31, 587, 700, 718.

Sir Henry Elliot informs us that Abūl Faẓl's Sikandar*pūr* (Atrejī) in Sarkār Qanauj "is now known as Sikandar*ābād*." Memoirs of the Races of the North-Western Provinces of India, ed. Beames, Vol. II, 91.

Elsewhere, the same authority tells us that *Islām*pūr Bahrū in Sarkār Sambhal is now "more usually known as *Salīm*pūr Bahrū. *Ibid.*, II, 136r

So Blochmann assures us that *Sulaimān*ābād was early *changed by the people* to the shorter form *Salīm*ābad, by which name it is still known at the present day." Notes on Places of Historical Interest in the District of Hugli, Proc. A.S.B., 1870, p. 112.

So again, the Mānik*drug* of Abūl Faẓl (*Āīn*, Text, I, 483; Jarrett, II, 236 and the *'Ālamgīrnāma* (Text, 1025) is now shown as Manik*garh* in our maps and atlases. Imp. Gaz. Atlas, Pl. 39, B 3; Constable's Hand Atlas of India, Pl. 32, A b.

13. A Progress Report on the Work done during the year 1918 in connection with the Bardic and Historical Survey of Rajputana.

By Dr. L. P. Tessitori.

[With Plates XIV–XV.]

General Remarks.

The year under report was a satisfactory one in many respects. The principal ground for satisfaction was that at the end of March the Bikaner Darbar decided to apply to the Government of India for a further extension by one year of the term of my employment under them—which was to have ended on September 1918—and thereby relieved me of all the anxiety arising from shortness of time in comparison with the magnitude of my task. The Government of India first sanctioned this extension in May, and then, to make up for the dislocation which the retention of my services by the Bikaner Darbar two and a half years longer than was anticipated had caused in my programme of work for a Summary Survey of the Bardic and Historical Literature of Rajputana, sanctioned, in September, a special grant towards the cost of my employment during these two and a half additional years. In future, however, the Government of India will not be prepared to sanction further supplementary grants in order to meet emergencies arising from extensions of the term of my employment under the different Darbars, but Darbars wishing to retain my services for a longer term than is provided for in the scheme for the Summary Survey, will have to meet the consequent financial obligations themselves.

Another ground for profound satisfaction was the Bikaner Darbar's decision to start a small archæological museum in the Bikaner Fort, for the preservation of the few antiquities—chiefly Buddhist bricks and terracottas, Jain sculptures, and Rajput *deralis*—which I have been able to collect in the course of my archæological tours. This will be a local museum, and if owing to the peculiar conditions prevalent in this part of the desert, the museum will probably never be a very rich one, it will none the less be interesting as a small mirror in which the few vestiges of antiquity scattered over an area nearly two hundred miles in diameter, are reflected and concentrated.

In May, Sir John Marshall, Director-General of Archæology in India, approached the Bikaner Darbar with a request that I might be placed at his disposal for the period of one month in

order to enable him to examine the results of the archæological exploration so far carried out by me in Bikaner territory. Accordingly, I was given leave to proceed to Simla, and remained absent from Bikaner from May 21st to June 22nd, in consequence. Among the arrangements made by the Director-General of Archæology for the purpose of giving me more facilities for the exploration of the Bikaner territory and the preparation of a descriptive list of the antiquarian remains found therein, was the creation of a post of draftsman-photographer for my office at the expense of the Archæological Survey. The post, however, could not be filled during the year as the Government's sanction of it was not known until late in December.

A difficulty under which I continued to labour throughout the year, was the old one: the want of a competent assistant. A Gujarati pandit was recruited and tried for one month in January, but as he was found unable to familiarize himself quickly with Marwari manuscripts, his employment could not be continued. Early in July, the Bikaner Darbar asked, at my request, the Jodhpur Darbar to lend us the services of Bāraṭha Kisora Dāna temporarily for two or three months, but when a reply at last came towards the end of September, this reply was a flat refusal.

I was a little more fortunate with my explorers. At the beginning of the year I had three of them, all Cāraṇas: my old explorer Vīṭhū Sītā Rāma, and my two new recruits Sãdū Jora Dāna and Bāraṭha Deva Karaṇa. But by the end of March none of the three was left as Sītā Rāma was caught at fault and had to be peremptorily dismissed and punished, and the two others had by the same time proceeded on unlimited leave. These resumed their service again in July, but Jora Dāna asked for another unlimited leave in August, and Deva Karaṇa was disabled by illness in September. Seeing that for one reason or another Cāraṇas, and particularly Bikaneri Cāraṇas could not be depended upon for regular service, I resolved to recruit people from other classes and by the beginning of October succeeded in securing the services of two men from Jodhpur: Bābū Hīrā Lāla and Bābū Pannā Lāla; to whom towards the middle of November I added a third man, also from the same quarter, Sevaga Visva Nātha of Varaḷū. The reason why Cāraṇa's had been preferred before, is that a Cāraṇa is the best qualified man for the search of bardic manuscripts, but in the case of the Bikaner district where bardic manuscripts are almost as rare as waterfalls, this qualification is not one of much importance.

The rotographical apparatus which, as mentioned in the last year's report,[1] I had arranged to acquire for the photo-

[1] *Journ. As. Soc. of Be.*, vol. XV (N.S.), 1919, p. 6.

graphing of manuscripts could not, owing to war conditions, be received in time to allow of any photographs being taken before the end of the year.

Editorial Work.

The two works which principally engaged my attention during the year, were the edition of the *Chanda rāu Jèta Sī rò* by Vīṭhū Sūjò, and the compilation of the *History of Bikaner*. The former work was completed and sent to Press in October. The edition of this poem was a task of special difficulty owing to the fact that it had to be based on only two manuscripts, whereof one was good, but the other was of very little philological value. But the poem was so important that no pains bestowed on it seemed to me too great, and I think I can say without undue self-confidence that the edition produced is as correct as could possibly be expected from the condition of the manuscripts, and perhaps more. My principal help in solving the numerous difficulties of the text, was the other homonymous poem—the adespotic *Jèta Sī rò Chanda*,—which being coeval and very similar in style and language, gives much scope for illuminating comparisons with the poem edited. But this help could not be utilized without a very careful study of the adespotic poem as well, so that at the end I found that the edition of one of the two poems had cost me so much labour that hardly more labour would have been involved in the edition of both of them.

By the end of the year, or more accurately by the time I resumed my winter tour in the beginning of December, I had progressed with the composition of the *History of Bikaner* as far as the accession of rāu Lūṇa Karaṇa, the son of rāu Vīkò. This will not seem much to those who know that the history of Bikaner begins from rāu Vīkò, but I have not begun from hence. It seemed to me that since my history is to be, ultimately, a history of the ruling family, I could not begin *ex abrupto* with one particular member of this family for the mere reason that he was the first ruler of Bikaner, and ignore all the names of those who came before him and filled with their glorious exploits many pages in the great book of the history of Rajputana. I have therefore begun from the exordia of the Rāṭhòṛa power in Marwar, so far as these exordia are known, and have outlined a history of the Rāṭhòṛa family from the times of Sīhò (twelfth century A.D.) to those of rāu Jodhò, the father of rāu Vīkò (fifteenth century A.D.) as a sort of introduction to the history of Bikaner proper. The compilation of this introduction has been to me a source of special satisfaction not only because it afforded scope for the solution of many knotty points, but also because it enabled me to utilize

much material which I had collected when I was in Jodhpur in 1915 and was preparing myself to write a history of this State. Needless to say, the history of the Rāṭhòras from the times of Sīhò to those of rāu Jodhò—the father of rāu Vīkò—is as much history of Bikaner as it is of Jodhpur.

Publishing.

Three publications were issued during the year, to wit: (1) The *Vacanikā Ratana Siṅghajī rī Mahesudāsòta rī*. Part i: Diṅgaḷa Text with Notes and Glossary; (2) fasciculus i of *Descriptive Catalogue of Bardic and Historical Manuscripts*, Section i: Prose Chronicles, Part ii: Bikaner State; and (3) fasciculus i of ditto, Section ii: Bardic Poetry, Part i: Bikaner State; and one new work was sent to Press, to wit: the *Chanda rāu Jèta Sī rò* mentioned above. The "Progress Report" for 1917, containing two lengthy appendices and meant for insertion in the Journal of the Asiatic Society of Bengal, as usual, was submitted to the Society in April, but the Society having decided to apply to the Government of Bengal for a special grant towards the cost of its publication, the manuscript was withheld from the Press until late in September, and consequently the Report could not be published during the year.

Exploration.

The exploration of the Bikaner territory in search of antiquarian remains, was continued according to plan, every new village being first visited by one of my explorers and places which from the explorers' report or from other sources were suspected to be of interest, being personally visited by myself. My tours, with short pauses at headquarters, lasted altogether about three months, and were made in two periods: from January 18th to March 18th, and from December 5th to December 31st. The tours made during the latter period were especially undertaken with the object of procuring materials for the proposed Museum, and as this necessitated a certain amount of excavation, the ground covered in these tours was very small. The following is a list of the places of interest personally explored by myself during the year: (1) Uderāmasara (Jan. 18th); (2) Kiḷacū (Jan. 21st); (3) (Ūdāsara (Jan. 30th); (4) Gajanèra (Febr. 3rd). Koṭarī, Kolāyata, Madha (Febr. 4th), Vīṭhanoka (Febr. 5th), Maṇḍāḷa (Febr. 6th), Jhajjhū (Febr. 7th), Vāsi-Varasiṅghasara (Febr. 8th); (5) Sūratagaḍha (Febr. 16th), Sardārgaḍha (Febr. 17th), Sahivāṇa (Febr. 18th–21st), Kānagharavāḷi Theṛī (Febr. 23rd), Mānakasara, Rāmapuravāḷi Theṛī (Febr. 25th); (6) Rājagaḍha (Dadarevò) (March 9th), Riṇī, Caṅgoī (March 10th), Vāya (March 11th), Bhādarā̃ (March 12th), Paṭuò, Rāmagaḍhiyā̃, Nā̃gaḷa, Serapurò, Niṇāṇa, Bharuāṇò, Gogāṇò, Gogāmeṛī (March 13th), Karotī, Sothī, Nòhara

(March 14th), Virakāḷī (March 15th), Rāvatasara, Namgajā (March 16th), Māṇikatheṛī, Dotheṛī, Bhāvariyò Theṛa (March 17th); (7) Raṅga Mahal (Dec. 5th-10th); (8) Dotheṛī (Dec. 11th–15th, 19th–22nd); (9) Kāḷī Vaṅgā̃ (Dec. 23rd–24th); (10) Pīḷī Vaṅgā̃ (Dec. 29th), Kāḷī Vaṅgā̃ (Dec. 29th-31st) Bahaloliyò (Dec. 31st).

The results of the exploration were remunerative. A large number of *theṛī*s, or ancient mounds, were located along the dry bed of the Ghagghar in the northern part of the State, and trial pits were sunk into those of them which appeared to be of particular importance. These small excavations, combined with superficial search, yielded an amount of inner antiquities —such as coins, beads, figurines, pieces of pottery, etc.—which, though not exceedingly rich, was deemed to possess such interest as amply to reward the labour and cost involved in the excavations. But as this is not the place for dealing with finds of a purely archæological character, I am obliged to content myself with this cursory allusion to this subject, and pass on to other finds which come within the sphere of the Bardic and Historical Survey.

The number of inscriptions copied and examined during the year, exceeds five hundred, thus surpassing all previous records, but unfortunately the great majority of these are unimportant *devaḷī* epitaphs and very few possess an interest of one kind or another In point of age, the inscriptions found range from the Saṃvat-century 1000 to the Saṃvat-century 1900, but the most numerous are the inscriptions dated in the Saṃvat-century 1700, and out of these last hardly two or three are really noteworthy. The inscriptions dated in the Saṃvat-century 1000 are only four and they have been found engraved not on *devaḷī*-slabs, but on *govardhana*-pillars, and not in devanāgarī, but in northern characters. One of these four inscriptions was discovered at Bhāsīṇò (Saṃvat 1039), another at Mũdharṛò (Saṃvat 1071), and the remaining two, very short effaced and illegible, at Uderāmasara. The oldest *devaḷī*-inscriptions were obtained from the Sujangaḍh tahsil, the ancient Mohilāvaṭī, and, as was to be expected, the greatest part, if not the totality, of them were found to be Mohila. The dates of these inscriptions range from the year Saṃvat 1186 (Gaṇerò) to the year Saṃvat 1388 (Choṭī Ghaṇṭigāḷa), but as regards their contents very little is utilizable to-day, because owing to the poor quality of the stone and the secular action of the weather, the writing is so effaced that in many cases nothing more than the date and a few letters here and there can be read with certainty. A very large number of *devaḷī*-inscriptions referring to Pallīvāḷa brahmins, with dates ranging from the Saṃvat-century 1500 to the Saṃvat-century 1800, were discovered in the Pallīvāḷa villages, west of Gajanèra, chiefly at Kolāyata and Jhajjhū, but being of no histori-

cal importance, they were neither copied nor taken into consideration. All the other inscriptions found, with a very few exceptions, are Rajput.

The new information which these Rajput inscriptions supply in connection with the history and pre-history of Bikaner, is interesting. The Mohila inscriptions mentioned above, establish beyond doubt the fact that the Mohilas' settlement in the tract afterwards known as Mohilāvaṭī. was already accomplished in the beginning of the Saṃvat-century 1200, and seem to indicate that in those early days their principal seat was not Chāpara, but Caraḷū, a place eleven miles away from the former. *Devaḷīs* discovered at Caraḷū supply us with at least four new names of the Mohila chiefs, to wit: Viṣṇu Datta > Devasarā (?) > An illegible name > Āhaṛa > Ambarāka, and at least three dates, to wit: Saṃvat 1200, being the year of the death of Devasarā; Saṃvat 1234, being apparently the year of the death of Devasarā's son whose name I have been unable to decipher; and Saṃvat 1241, being the year of the death of both Āhaṛa and Ambarāka, who, as the inscription tells, were both killed "in the battle of Nāgapura (Nāgòra)." Now Āhaṛa is one of the names in Mūhaṇòta Nèṇa Sī's pedigree of the Mohila rāṇās, and Āhaṛa's great grandfather Viṣṇu Datta is possibly one and the same person with the Hara Datta or Hari Datta mentioned by Nèṇa Sī. That Nèṇa Sī does not mention Devasarā, but gives two other names (Vèra Sī, Vālahara) in his stead, need cause no difficulty, because the inaccuracy of Nèṇa Sī's pedigree of the Mohila rāṇās has already been established by the *devaḷīs* found at Chāpara. The oldest Mohila record, dated Saṃvat 118..., was found at Sāraṅgasara, four miles westwards of Caraḷū, and is in the form of an epitaph, unfortunately almost entirely illegible, engraved on a *govardhana*.

Inscriptions throwing additional light on the history of the Sãkhalās of Jãgaḷū, were discovered at Aṇakhīsara (21 miles E.S.E. of Jãgaḷū), and at Vāsī-Varasīṅghasara (9 miles N. of Jãgaḷū). In the former place four *devaḷīs* were found all dated in Saṃvat 1340, three of these referring to Āsala, the son of Aṇakha Sīha and his two wives, Rohiṇī and Pūmã, and the remaining one referring to a Raṇa Mala, probably a relative of Āsala who must have died, or rather have been killed, on the same occasion as the latter. Though the inscriptions do not specify the tribe to which Āsala and his father Aṇakha Sī(ha) belonged, there can be no doubt that these were Sãkhalās, and that Aṇakha Sī is none else but the son and successor of rāṇò Rāya Sī, and incidentally the eponymous founder of Aṇakhīsara. The inscription discovered at Vāsī-Varasiṅghasara is still more interesting. It is not an epitaph, but a *kīrtistambha*-inscription of some length (35 lines), composed for the largest part in Sanskrit verses, and recording that Dūlaha Devī,

daughter of Kumăra Siṃha of the Šaṇkhukula, ruler of the country of Jaṅgaḷakūpa, and wife of Karṇa Deva, ruler of Jesaḷamera, caused a certain tank to be excavated in the year Saṃvat 1381. The importance of the record lies in the mention of Kumara Simha who is, of course, nobody else but rāṇò Kãvara Sī of Jãgaḷū, and in the date given in connection with his daughter. As the inscription mentions also Kumara Siṃha's father Kṣema Siṃha—the Khĭva Sī of the chronicles, —we have in this record the most positive document of the historicity of the names Khĭva Sī and Kãvara Sī, which form the subject of more than one legend of some celebrity in the desert. Combined together, the two separate records of Aṇakhīsara and Vāsī-Varasiṅghasara tend to prove the accuracy of the pedigree of the Sãkhalā rāṇās given by Nèṇa Sī, who in this case obviously derived his information from a better source than that utilized by him for his chapter on the Mohilas.

Next to the above-mentioned finds in importance and perhaps even more interesting is the discovery made at Dadarevò of an inscription which proves that in the later half of the Saṃvat-century 1200 this place was the seat of a Cāhavāṇa chief who bore the title of *rāṇā*, and thus indirectly confirms the truth of the Bikaneri tradition concerning Gogā De *pīr*. According to this tradition, Gogā De was born at Dadarevò of a Cāhavāṇa chief who was ruling over the place, and one manuscript examined by me in Jodhpur goes further and says that this chief, father of Gogā De, was called Jevara (*sic*) and bore the title of rāṇā.[1] Now the inscription mentioned above, which incidentally records the digging of a well, contains the name of a rāṇā Jayata Sīha, the son of *maṇḍaleśvara* Go Pāḷa, and gives for him the date Saṃvat 1270. It is therefore true that a Cāhavāṇa rāṇò was ruling over Dadarevò in ancient days, and in the light of the truth of this particular it is reasonable to conclude that the Bikaneri tradition concerning the birth of Gogā De at Dadarevò is accurate and that the rāṇò Jayata Sīha mentioned in the inscription is probably one of Gogā De's ancestors.

Inscriptions referring to Rāṭhòṛa chiefs of note were this year less numerous than last year. The oldest record of this kind discovered is a *kīrtistambha* which Kasamīra De, one of the wives of rāu Jèta Sī, erected in the village of Kisamīdesara, founded by her, to record the digging of a well in Saṃvat 1590. Next to this, in point of time, comes the *derālī* of Saṃsāra Canda, a son of rāu Vīdò, which was discovered at Pariyārò, and is dated Saṃvat 1596. A *derālī* which probably commemorates the demise of Hara Rāja, the son of rāu Vīkò's

[1] चवांड जेवर तिण रो रांणा खेताव थो गढ दद्रेवे राजधांनी थी. *Descr. Cat. of Bard. and Histl. MSS.*, sect. i, pt. i, No. 6, p. 19.

uncle Lakhò Riṇamalòta, in Saṃvat 1603. was discovered at Lakhāsara, the village which according to the tradition, Hara Rāja founded and named so after his father. Near it was found the *devaḷī* of Hara Rāja's grandson Sura Sāṇa. dated Saṃvat 1650. More important. from the dynastic point of view, are two *devaḷī*s which were found at Jañjheū and at Riṇī and which are dated Saṃvat 1622 and Saṃvat 1805, respectively. The former records the death of Siṅgha. a son of rāu Jèta Sī, and the latter the death of mahārāja Ānanda Siṅgha, the father of mahārājā Gaja Siṅgha. Lastly. at Coṅgoī was found the *devaḷī* of Vanamāḷī Dāsa, that son of rājā Karaṇa Siṅgha who caused so much internal trouble in Bikaner and contested the succession of his brother Anūpa Siṅgha, until he was murdered by the latter, and this is dated Saṃvat 1724.

Only four or five manuscripts. and even then of comparatively little value, were found in the villages explored during the year. No manuscripts were copied. and no manuscripts were received. but five fragmentary manuscripts which had been received during the previous year, were examined and included in the collection. These, together with five manuscripts purchased, are incorporated in the list given below.

Manuscripts Received.[1]

R. 22 : कूँपा महिराजौत रा दूहा १३१ (incomplete).

राव अमरसिङ्घजी रा दूहा ८५ गाडण केसवदास रा कहिया,

राव अमरसिङ्घजी रा दूहा ५०७ बारठ नरहरदास रा कहिया,

नींबा जोधाउत रा दूहा ५५ लालस जीवण रा कहिया.

और दूहा फुटकर,

दुनिया रै मुलकाँ री विगत,

बालीसा सूजा रा कवित्त आमिया करमसी रा कहिया,

कूँपावत केसरीसिङ्घ रा कवित्त,

सीरोही रा धणियाँ रा कवित्त,

तेजसिङ्घ डूँगरसीऔत रा कवित्त,

[1] For previous lists see "Progress Reports" for 1915. 1916 and 1917. No. *R.* 5 in the list of the manuscripts received in 1915 is to be considered as cancelled, as the donor, Sindhāyaca Udè Rāja, shortly after presenting the manuscript, borrowed it under some pretext and never returned it afterwards.

रतनसी अखैराज रा कवित्त,
और कवित्त फुटकर,
मेवाड़ री वातां .

Size 11″ × 8¼″. No. of leaves 188, numbered 106-152, 154-185, 202, 214-248, 250-263, 265-328, 552-564, plus two leaves without number. Loose. Fragmentary.

Written in Saṃvat 1713, mostly by Vyāsa Jasā at Jodhpur.

Presented by Bāraṭha Kisora Dāna of Jodhpur in April 1917.

R. 23: राजा बलवन्तसिङ्घजी री नीसाणी .

Size 10″ × 7″. No. of leaves 23. Uncovered and fragmentary.

About 50-70 years old.

Presented by Bāraṭha Kisora Dāna of Jodhpur in April 1917.

R. 24: फुटकर कवित्त .

Size 11½″ × 8¾″. No. of leaves 51. Uncovered and fragmentary.

About 80-100 years old.

Presented by Bāraṭha Kisora Dāna of Jodhpur in April 1917.

R. 25: फुटकर गीत .

Size 11½″ × 8″. No of leaves 42, all loose, unnumbered and fragmentary.

About 50-70 years old.

Presented by Bāraṭha Kisora Dāna of Jodhpur in April 1917.

R. 26: रामरासौ धधवाड़िया माधवदास रौ कहियौ (fragmentary),
रुकमणीहरण ऊलै आइयै रौ कहियौ (fragmentary),
साहिजादा कुतबदीन री वात (fragmentary), वगैरा .

Size 6″ × 10″. No. of leaves 226, of which most detached and out of order. Uncovered. Fragmentary.

Written in Saṃvat 1788 and afterwards.

Presented by Bāraṭha Kisora Dāna of Jodhpur in April 1917.

MANUSCRIPTS PURCHASED.

P. 37: राठौड़ मोहकमसिङ्घजी रा कवित्त २७ बारठ अहजन रा कहिया,

ऊमादे भटियाणी रा कवित्त १४,
सीहक्कत्तीसी रा दूहा,
सूरक्कत्तीसी रा दूहा,
क्रिपणादरपण दूहाबन्ध,
वीरविनोद रा दूहा ७५ आसियै वाँकीदास रा कहिया.

Size 11″ × 7½″. No. of leaves 186. Leather-bound.
Written during and before Saṃvat 1904 (see p. 182*a*).
Purchased in July 1918.

P 38: सोलङ्की सूरजमल आणन्दसिङ्घौत देसूरी रा धणी रो रूपक,
राठौड़ राइ भगवानदासजी बीलाड़ै रा धणी रौ कवित्त दवावैत बारठ खुमाण रौ कहियौ,
आईपुराण अथवा राइ भगवानदासजी रौ रूपक बारठ खुमाण रौ कहियौ,
राइ भगवानदासजी रा गीत कवित्त बारठ खुमाण रा कहिया,
फुटकर कविता,
सुवावहोतरि माहिलो वाताँ ६.

Size 8½″ × 6¼″. No. of leaves 133, of which one (leaf 118) torn off and lost. Cloth-bound.
Written between Saṃvat 1756 and 1772 at Bīlāṛò.
Purchased in July 1918.

P. 39: राठौड़ राज भगवानदास बीलाड़ै रा धणी री कविता फुटकर बारठ खुमाण री कही,
राठौड़ राज रोहितास बीलाड़ै रा धणी री कविता आढा दुरसा री तथा औराँ री कही,
सीसोदिया गुमानसिङ्घजी रा कवित्त,
करनीजी रा छन्द वीठू मेहा रा कहिया,
गोगाजी रा छन्द रसावला वीठू मेहा रा कहिया,
राउ अमरसिङ्घजी रा छन्द गाडण माधोदास रा कहिया,

राउ अमरसिङ्घजी रा झूलणा आढा किसना रा कहिया,

फुटकर गीत कवित्त.

Size $6\frac{1}{4}'' \times 7\frac{1}{4}'' - 8''$. No. of leaves 288 (numbered 89-377, minus leaves 234-5 which are missing). Cloth-bound.

Written between Saṃvat 1768 and 1774, probably at Bīlāṛò like the preceding manuscript.

Purchased in July 1918.

P. 40 : रीयाँ रा ठाकुर सेरसिङ्घजी रौ बारैमासौ आढा पहाड़खाँ रौ कहियौ,

राजा बलवन्तसिङ्घजी रा टूहा आढा जादूराम रा कहिया,

राजसिङ्घ खीँवावत रा झूलणा आढा किसना रा कहिया,

नाममञ्जरी,

महाराणा भीमसिङ्घजी री झमाल महडू महादान री कही,

रघुनाथरूपक सेवग मञ्छाराम कृत,

महाराणा सरूपसिङ्घजी रा कवित्त आढा जादूराम रा कहिया,

रसरतन टीका सहित,

फुटकर गीत कवित्त.

Size $11\frac{1}{2}'' \times 9\frac{1}{4}''$. No. of leaves 166 Cloth-bound.
Written about Saṃvat 1901 (see p. 121[a]).
Purchased in July 1918.

P. 41 : सिवदानसिङ्घ भाग्यसिङ्घौत जोधा केसरीसिङ्घौत रौ रूपक बारठ लालै रौ कहियौ,

गीत फुटकर .

Size $6\frac{3}{4}'' \times 8\frac{1}{4}''$. No. of leaves 46. Loose.
Written in Saṃvat 1925.
Purchased in July 1918.

APPENDIX.

The Bikaner *prašasti* of rājā Rāya Siṅgha (Samvat 1650).

In an appendix to the last Report of the Survey[1] I had incidentally mentioned, as a sign of the interest for historical matters which the Rajput Princes were evincing at the time of Akbar, the long *prašasti*-inscription caused to be engraved by Rāya Siṅgha, the contemporary Rājā of Bikaner, in the new fort which he built in his capital. This inscription is still in *situ* on a jamb of the Sūraja Pola, the oldest and most beautiful of the three successive gates leading into the interior of the Bikaner fort, and is an object of admiration to many visitors who suddenly catch a glimpse of it as they pass under the gate. It is, in fact even externally a noteworthy inscription, both for its unusual length and for the neatness and beauty of its characters, which are designed calligraphically and even to this day stand out very boldly thanks to the great depth to which they are incised. The inscription numbers 92 lines and covers a space of about 6′ 9″ × 2′ 3″.

As the last three lines expressly tell, this inscription was set up by Rāya Siṅgha to commemorate the completion of the "durga-pratolī"—obviously the same Sūraja Pola gate—on the sixth day of the bright fortnight of Māgha of the year Saṃvat 1650. But even the most superficial examination of the contents of the inscription suffices to show that this ostensible reason justifies only the last eleven lines of the text at the most, while the greatest bulk of the text containing a panegyric of the Rāṭhòṛas, a genealogical list of the ancestors of Rāya Siṅgha, and lastly an account of his exploits, is, to say the least, superfluous and unnecessary from the point of view of the object avowed. Evidently, the real object of the inscription was to record not the construction of the gate, but the glory of Rāya Siṅgha and the names of the illustrious personages from whom he traced his descent. It is, like all *prašasti*-inscriptions, a document of human vanity, a boast transposed into stone and crystallized to last for centuries and dazzle the generations to come with the fulgent halo of one name: Rāya Siṅgha, the Rāṭhòṛa Rājā of Bikaner.

But it is also something more. It is, if I interpret it correctly, an attempt to document a claim, an extravagant claim which the Rāṭhòṛas of Rajputana had begun to put forward in that tour of time, that they are the offspring of rājā Jè Canda of Kanauj and, more remotely, of Rāma Candra himself. The reasons which led the Rāṭhòṛas to put forth this claim are easy enough to understand, and that they should have put it forward at this

[1] *Journ. As. Soc. of Be.*, vol. xv (N.S.), 1919, p. 31.

particular time, is a fact which is easily accounted for by the stimulus which the Rāṭhòṛas in particular and the Rajputs in general received from the Court of Akbar. That Akbar was himself a believer in genealatry—and in what was he not a believer !—is conspicuously demonstrated by Abul Fazl himself, who, in the first chapters of his "Nāma," has wasted much ink to trace the descent of this monarch to that common father of mankind. Adam Similarly, in our *praśasti* Rāya Siṅgha traces his descent to Ādi Nārāyaṇa, the primordial Being according to his Hindu antology. The coincidence is striking. Of course examples of genealogical or historical accounts going back to the origins of the world are not uncommon in the earlier Hindu literature, but in the period of Akbar we are faced with a form of genealatry which is, as it were, contagious and affects both Hindus and Muhammadans alike. It is, undoubtedly, the manifestation of a tendency of the period, and the contact of the Muhammadan and Hindu civilizations which the Mughal Emperor brought about so genially, must have greatly favoured its spread. Thus while on one side the Emperor boasted before the Rajput Princes his descent from Babar and Chingiz Khan and proclaimed, or caused to be proclaimed, the tale of his miraculous conception by a Celestial Light or the Sun in the chaste womb of Alanguwa centuries before, the Rajput Princes on the other side asserted that they too were the offsprings of the Sun or of the Moon, and armed themselves with genealogies linking the names of their ancestros with those of the most illustrious figures in Indian history and mythology, such as Jè Canda of Kanauj, Rāma Candra, Krṣṇa, and so forth. The *praśasti* of Rāya Siṅgha contains one of these genealogies, and as this was in great part a novelty at the time, no previous bard of the Rāṭhòṛas having been aware of the connection of this family with the Gahiravāḷas of Kanauj, Rāya Siṅgha thought of giving to this novelty the solemn sanction of a lapidary document and set it up on the jamb of the newly completed gate as a conspicuous record for all the present and future generations.

The inscription is in Sanskrit and consists of five parts, well distinct from one another, to wit: (1) a *maṅgalācaraṇa* (ll. 1-3). (2) a preamble (ll. 3-14), (3) a genealogy of the Rāṭhòṛas from Ādi Nārāyaṇa to rājā Rāya Siṅgha (ll. 14-67). (4) a panegyric of Rāya Siṅgha (ll. 67-81), and lastly (5) a record of the dates connected with the salient stages in the construction of the new fort, from the surveying of the site to the completion of the gate on which the inscription is walled (ll. 82-92). Differences of style, incongruities, and repetitions show that the inscription far from being an organic and homogeneous composition, is a mosaic of different pieces welded together without skill. It is obvious that the document was not written in one piece, nor perhaps by one and the same author,

but was made up of different parts fetched from different directions. One of the components is the genealogy of the Rāṭhòṛas with its bombastic preamble; the **इति श्रीरायसिंह पूर्वजगुणवर्णनम्** at the end of this part shows very crudely its separate individuality. Another component is the panegyric of Rāya Siṅgha, which repeats in part statements that had already been made in the last verses of the genealogy and which is itself composed of two. if not three, separate parts as indicated not only by intrinsic evidence, but also by a separate enumeration of the verses. A third component is the record of the dates with which the inscription closes, and it is noteworthy that even this part contains two verses which. though placed together, are incongruous with one another. Finally, a fourth component is the *maṅgalācaraṇa* at the beginning of the inscription, which is but a trite commonplace borrowed from traditional usage and prefixed to the whole.

It is a noteworthy and fortunate circumstance that separate records have been preserved, both on stone and on paper. of the different components of the inscription. Two inscribed slabs walled inside the porch of the same Sūraja Pola gate, on the right and left, have preserved to us in two identical copies the original from which the record of the dates at the end of the text (ll. 82-92) and the first three verses in the panegyric of Rāya Siṅgha (ll 67-71) have been taken. These twin slabs contain the original inscription set up by Rāya Siṅgha to commemorate the completion of the gate in Saṃvat 1650, and it is noteworthy that in the text of this inscription the panegyrical portion just mentioned comes after the first and before the second of the two verses given at the beginning of the record of the dates in the *prašasti*-inscription (ll. 82-83, ll. 84-85), and that by this arrangement, which is evidently the right one, the incongruity noted above is eliminated. Though both the twin inscription and the *prašastis*-inscription bear the same date and are designed and probably also incised by the same hands, a significant verbal alteration in the text of the latter inscription [1] shows that it is posterior to the twin inscription by a not inconsiderable interval of time.[2] A very interesting particular in the twin inscription is the mention of its author at the end,

[1] This is the substitution of **रायसिंह**: **छती** (l. 69 of *prašasti*-inscription) for **पातिसाहि** : **पुर**: (l. 5, and l. 4 of the twin inscriptions), which unmistakably denotes a change in the relations between Rāya Siṅgha and the Emperor Akbar.

[2] A third inscription, substantially identical with the twin inscription, but with slight alterations in the wording in the latter portion of the text, is walled on one of the jambs of a minor gate, now closed up and in part buried under débris, which originally gave access from the interior of the fort to the peripherical path running between the moat and the main rampart.

this author a Jain, *muni* Jayatā, the pupil of *vā*(*caka*) Kṣamā-ratna of the Bṛhadgaccha.[1] This is probably the same man who composed or shaped together the *prašasti*-inscription. and in this respect it is significant that though his name has been omitted in this inscription. the Jain symbol ॥ ६० ॥ at the beginning has not been discarded.

The paper record to which I have alluded above, is an old *guṭikò* preserved in the Darbar Library in the Fort of Bikaner, and described in my *Descriptive Catalogue of Bardic and Historical Manuscripts*, sect. ii, pt. i, pp. 70-3. It is a contemporary record, for it was written from Samvat 1640 to Samvat 1656, and almost entirely by Vīdāvata Sā̃vaḷa Dāsa Sā̃gāvata, one of the nobles in the service of rajā Rāya Siṅgha. Pages 226^a-232^b of this *guṭikò* give the full text of the *Rāyasiṁhapūrva jaguṇavarṇanam*-corresponding to ll. 1-67 in the *prašasti*-inscription—as an independent work and with several different readings, and pages 223^a-225^a give the text of the rest of the *prašasti*-inscription also as a work by itself and with different readings, and besides with some alterations in the order and number of the verses. One of these alterations in the order of the verses and some of these different readings agree with the text of the twin inscription, wherefrom it is clear that the copy in the *guṭikò* is not a slavish derivation from the *prašasti*-inscription, but is to some extent based on the twin inscription, and perhaps also on some manuscript copy which has remained unknown to us.

Reverting now to the examination of the contents of the *prašasti*-inscription, not many words need be wasted on the contents of the first sixty lines. The *maṅgalācaraṇa* which, is preceded by a salutation, to Kṛṣṇa, the *iṣṭadeva* of the Rajputs, consists of two verses, one in honour of Viṣṇu and the other in honour of Gaṇeša. The lengthy preamble which follows, is one single monstrous sentence in prose whereof the grammatical subject is a substantive connected with no less than twenty-three genitives, mostly prolix qualitative compounds, and the predicate is a passive form placed at the end of the sentence. In spite of the deluge of epithets with which the sentence is flooded, this does not supply a single historical information nor does it contain a single statement that is of any value, on the contrary it is so generical that it does not even mention the Rāṭhòras explicitly, but implies them in the epithet "Kings born in the race of the Sun." Of no greater value. on the whole, is the genealogical composition in *šloka*s which follows. and which ultimately is but a long list of bare names put in doggerel verses and worded in a very low and monotonous

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[1] दृष्ट्वच्छीयवा° श्रीवमारत्रसि (*sic*) अमु°जयता लिखतं . The same phrase with the variant: °सिद्धेव मुनिजयता ध्येव, is found at the end of the inscription mentioned in the preceding note.

form. As already remarked above. this genealogy links the names of the earliest known ancestors of the Rāṭhòṛas of Marwar with those of the Gahiravāḷa kings of Kanauj, and hence, through a long list of Paurāṇika names, goes back to Rāma Candra. and ultimately to Ādi Nārāyaṇa himself. The list from Ādi Nārāyaṇa to Jaya Candra (Jè Canda) of Kanauj comprises no less than 133 names, a long list no doubt, but hardly so much so when one considers the enormous length of time involved, and the fact that other genealogies of the Rāṭhòṛas include within the same limits a more than double number of pedigrees.[1] The names in the list are the following: 1. Nārāyaṇa > 2. Brahmā > 3. Marīci > 4. Kaśyapa > 5 Sūrya > 6. Manu > Šrāddhadeva or Vaivašata > 7. Ikṣvāku > 8: Vikukṣi > 9. Purañjaya > 10. Anenā > 11. Višvagandhi > 12. Indra > 13. Yuvanašva > 14. Sāvasti > 15. Bṛhadašva > 16. Kuvalayāśvaka Dhudhamāra > 17. Dṛḍhāšva > 18. Haryašva > 19. Kṛšāšva > 20. Senajit > 21. Yuvanāšva > 22. Māndhātā > 23. Purukutsa > 24. Trasadašva > 25. Anaraṇya > 26. Haryaša > 27. Pravaṇā > 28. Tribandhana > 29. Satyavata Trišaṅku > 30. Hariščandra > 31. Rohita > 32. Harita > 33. Campa > 34. Sudeva > 35. Vijaya > 36. Bharuka > 37. Vṛka > 38. Bāhuka > 39. Šagara > 40. Asamañjas > 41. Aṃsumān > 42. Dilīpa > 43. Bhagīratha > 44. Šruta > 45. Nābha > 46. Sindhudvīpa > 47. Ayutāyu > 48. Ṛtuparṇaka > 49. Sarvakāma > 50. Sudāma > 51 Asmaka > 52. Mūlaka > 53. Dašaratha > 54. Ajlavila > 55. Višvasaha > 56. Khaṭvāṅga > 57. Dīrghabāhu > 58. Raghu > 59. Aja > 60. Dašaratha > 61. Rāmacandra > 62. Kuša > 63. Atithi > 64. Niṣadha > 65. Nala > 66. Puṇḍarīka > 67. Kṣetradhanvā > 68. Devānika > 69 Ahīna > 70. Pāriyātra > 71 Balasthala > 72. Arka > 73. Vajranātha > 74. Sagaṇa > 75. Vidhṛti > 76. Hiraṇyanātha > 77. Puṣpa > 78. Dhruvasandhi > 79. Bhava > 80. Sudaršana > 81. Aguivarṇa > 82. Šīghra > 83. Maru > 84. Prašruyuta (*sic*) > 85. Saṅgha[2] > 86. Amarṣaṇa > 87. Sahasvān > 88. Višvasakta > 89. Prasenajit > 90. Takṣaka > 91. Bṛhadbala > 92. Bṛhadraṇa > 93. Gurukriya > 94. Vatsavṛddha > 95. Prītivyoma > 96. Bhānu > 97. Višvaka > 98. Vahinīpati > 99. Sahadeva > 100. Vīra > 101. Bṛhadašva > 102. Bhānumān > 103. Pratīkāša > 104. Supratīka > 105. Marudeva > 106. Sumakṣatra > 107. Puṣkara > 108. Antarikṣaka > 109. Sutapā > 110. Amitrajit > 111. Bṛhadbhānu > 112. Barhi > 113. Kṛtañjaya > 114. Raṇañjaya > 115. Sañjaya > 116. Šrāva > 117. Šuddhoda > 118. Lāṅgula > 119. Prasenajit > 120. Kṣudraka > 121. Ruṇaka > 122. Suratha > 123. Sumitra > 124. Padārtha > 125. Jñānapati > 126. Tuṅganātha > 127. Bharata > 128. Puñjarāja > 129. Vambha > 130. Ajeyacandra > 131. Abhadayašva > 132. Vijayacandra > 133. Jaya-

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[1] For instance the poetical *vaṃsāvalī* in MS. No. 15 (*c*) of *Descr. Cat. of Bard. and Histl. MSS.*, i. i, contains about 280 pedigrees.

[2] *Sic*, a mistake for Sandhi.

candra. Then follow the names of the Rāṭhòṛas of Marwar from Varadāyī Sena, who is represented as a son of King Jayacandra, to Vikrama, *i.e* rāu Vīkò, the founder of Bikaner. These names are: 134. Varadāyīsena > 135. Sītarama > 136. Sīha > 137. Āsathāma < 138. Dhūhaṛa > 139. Rāyapāla > 140. Kānha > 141. Jālhaṇa > 142. Chāḍā > 143. Tīḍā > 144. Salakhā > 145. Vīrama > 146. Cāmuṇḍarāya > 147. Raṇamalla > 148. Yodharāya > and 149. Vikrama. With Vikrama begins the Bikāner line of the Rāṭhòṛas, to which belong the following names: 150. Lūṇakarṇa > 151. Jaitrasiṃha > and 152. Kalyāṇamalla, the last-mentioned one being the father of Rāyasiṃha (Rāya Singha), the protagonist of the inscription.

From this point (l. 60) the inscription possesses the value of a contemporary document and for the authentic information which it supplies on the life and military career of this great ruler of Bikāner. Rāya Singha, deserves to be translated in full as far as l. 82, where another subject begins with a record of the dates.

The panegyric of Rāya Siṃha.

Part i:

l. 60. . . . "[and] his son [1] [was Rāya Siṃha], the rājā [who now] shines [on the *gaddī*] as a protector of the faith of religion. [Rāya Siṃha] who with his splendid feats has decorated
l. 61. the earth surrounded by the oceans, [Rāya Siṃha] whom out of great fear the womenfolk of his frightened enemies praise day and night. With the thoughts of his mind ever turned to the Vedas and the Smṛtis, like a Kalpa-tree on the face of the earth, like a fronted gem among all the rājās, this king Rāya Siṃha is victorious. [He] who by the strength of his arm [2] defeated the
l. 63. great Gaurjara army [3], and who through piety released the lord of Arbuda [4] and captured the difficult mountain [of Arbuda], and overthrew the city that [is called]

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[1] *i.e.* **rāu Kalyāṇa Mala's** son.

[2] **Or,** according to the reading in the *guṭikò* "before [the eyes of] Akabbara Sāhi" (श्रीमदकब्बरसाहिरग्रे विजिता द्वि).

[3] An allusion to the engagement between the forces of Akbar and those of Muḥammad Ḥusain Mīrzā, near Ahmadabad (1573 A.D.), to which Rāya Singha participated (*Muntakhab*, Lowe, ii, pp. 169-172) and distinguished himself for his bravery (*Akbarnāma*, Beveridge, iii, pp. 81-2). See note to ll. 68-9, below.

[4] Rāu Suratāṇa, whom Rāya Singha made a prisoner at Ābū and brought to Court in 1576 A.D. (*Akbarnāma*, iii, pp. 278-9). The phrase धर्मद्वारेण निर्मुक्तः seems to confirm the *Bikāneri* tradition according to which Rāya Singha, after capturing Suratāṇa, interfered on his behalf before the Emperor or was otherwise instrumental in having him released.

l. 64. by the name of Šivāyana,[1] and with force bound the Balocas.[2]

[He] who marching in haste from Jodhpur and reaching
l. 65. the village of Yāẏila,[3] with the force of his arṃ smote the sons of Ulūka,[4] [and then] by order of the Emperor[5] defeated the lord of the Kābilas,[6] which mortal knows the far shore of the ocean of his deeds ?

l. 66. [He] who bestowed on the most eminent brahmins *tulāpuruṣa*[7] and other great gifts, be that king [Rāya] Siṃha [ever] victorious.

l. 67. Here ends the panegyric of the ancestors of Rāya Siṃha.

Part ii:

[He] who first shook the mount Arbuda [and then] after
l. 68. vanquishing in battle with great bravery Vijo and the others, induced the rulers thereof to worship his feet,[8]

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1 *i.e.* Sivāṇò, the stronghold of Candra Seṇa, the son of rāu Māla De of Jodhpur. According to Abul Faẓl, Rāẏa Siṅgha commanded against Candra Seṇa in 1574 A.D., in conjunction with Shāh Qulī Khān Maḥram (*Akbarnāma*, iii, p. 113), but was unable to take Sivāṇò, wherefore Akbar recalled him in 1576 A.D., and gave the command to Shahbāz Khān who took the fort in the same year (*Op. cit.*, pp. 237-8). Some Rajasthani Chronicles, however, associate the name of Rāẏa Siṅgha with that of Shahbāz Khān in the capture of Sivāṇò, and thereby corroborate the suggestion that Rāẏa Siṅgha was present at the capture of the place.

2 Abul Faẓl tells that in the year 1585 A.D. (or 1586 ?) Rāẏa Siṅgha and Ism'aīl Qulī Khān were sent to chastise the Balūcis, who had gone the way of disobedience (*Op. cit.*) iii, pp. 716-7; *Muntakhab*, ii, p. 360), and that they came back on the 28th March, 1586 A.D., bringing the Balūcī leaders with them to Court (*Akbarnāma*, iii, p. 739; *Muntakhab*, ii, p. 364).

3 The Jael of the Map, a village 27 miles eastward of Nagur, as the crow flies. Abul Faẓal gives the name of the village near which the engagement in question took place as *Kahntonī* (*Akbarnāma*, iii, p. 50) which is evidently the same as Al Badāonī's *Khatoulī* (*Muntakhab*, ii, p. 153) and may be identified with Katoti, a small village situated only 7 miles eastwards of Jael

4 The sons of Ulūka, *i.e.* Ulugh Mīrzā, were Sikandar Mīrzā (*alias* Ulugh Mīrzā) and Maḥmūd Sulṭān Mīrzā (*alias* Shāh Mīrzā, *vide* Blochmann, *Āīni Akbari*, i, pp. 461-2), but the phrases "sons of Ulūka" is here inaccurately used to indicate chiefly Ibrāhīm Ḥusain Mīrzā, who was not a son, but a brother of Ulugh.

5 Thus according to the original reading पातिसाहिनिदेशेन, preserved in the *guṭikò*. The reading महीन्द्रमौलिरत्नेन "crest-gem of [all the] kings" met with in the inscription, is undoubtedly a later alteration introduced not without intention.

6 Mīrzā Muḥammad Ḥakīm. See notes to ll. 73-75 below.

7 A gift of gold equal to the donor's bodily weight.

8 Devaṛò Vijò Hararājòta, the ambitious man who had usurped the reins of power from rāu Suratāṇa of Sīrohī. Rāẏa Siṅgha drove him away from Sīrohī and re-established Suratāṇa on the *gaddī* after the latter had consented—according to the Rajasthani chronicles—to cede half of the Sīrohī territory to the Emperor. This half portion of Sīrohī was subsequently given in fief to Sīsodiyò Jaga Māla, when Suratāṇa rebelled

and who in battle slew the son of Ulūka, the devastator of the Gurjara country, after binding [him] and bringing
l. 69. [him away] from his large forces, even into the presence of the Emperor:[1] [he] who speedily annihilated in battle [the forces of] Virāhima, the brother of the above-mentioned [Ulūka], the incontrollable [rebel who] shaking the earth [had] come [as far as] Ahipura,[2] blocking the road[3];
l. 70. [he] who after vanquishing the powerful sovereigns of the river Sindhu, [the one] called Chatta, [the one called]
l. 71. Gājī and the rest,[4] made his own fame resound as far as the moon through their [very] mouths.

Part iii:

And the sovereign called Ibhrāma,[5] having been deprived[6] with force of his position by [the sovereign]

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and killed the latter together with his auxiliary rāu Rāya Siṅgha Candrasenòta (Saṃvat 1640 = A.D. 1583. Cir. *Akbarnāma*, iii, p. 614).

[1] Here too I have translated according to the original reading श्रीपातिसाहेः पुरः preserved in the twin inscription, and have disregarded the later alteration श्रीरायसिंहः क्षती in the text of the *prašasti*.

The phrase उलूकात्मज, which apparently refers to Muḥammad Ḥusain Mīrzā is again used inaccurately, as in l. 65, for he was not a son, but a brother of Ulugh. Another inaccuracy is the phrase खाजौ निजघान "slew in battle" which is worded so as to convey the impression that Rāya Siṅgha overpowered and killed Muḥammad Ḥusain in a fair fight. From the Muhammad historians (*Akbarnāma*, iii, pp. 85-6: *Muntakhab*, ii, pp. 171-2) we know that after his capture by the Imperials in the battle near Ahmadabad, Muḥammad Ḥusain was made over to Rāya Siṅgha who shortly afterwards had him executed. A third inaccuracy is the statement that Rāya Siṅgha captured and bound Muḥammad Ḥusain; from Abul Fazal we know that the capturers were Gadā 'Alī, one of the royal servants, and a servant of the Khān Kilān, whose name is not recorded (*Akbarnāma*, iii, p. 84).

[2] *Ahipura* "the city of the snakes" is but a poetical synonym of Nagor (<*Nāgapura*). The reading अहिपुरं is found only in the twin inscription, the *prašasti* and the *guṭikò* substituting for it हि पुनर्.

[3] When in September 1572 Akbar went to fight the Mīrzās in Gujarat, Rāya Siṅgha was posted at Jodhpur to protect the rear (*Akbarnāma*, ii, p. 540; *Muntakhab*, ii, p. 144). He stuck to his duty well, and when the next year Ibrāhīm Mīrzā, routed at Sarnal, escaped to Nagor, Rāya Siṅgha marched after him from Jodhpur and drove him away with loss (*Akbarnāma*, iii, pp. 49-50).

[4] Another reference to the Baluchistan campaign, which has already been recorded in l. 64. Among the Balūcī leaders, whom Rāya Siṅgha and Ism'aīl Qulī Khān persuaded to submit and brought to Court, were Ghāzī Khān and Chīta (*Akbarnāma*, iii, p. 739), and these are evidently the persons meant by the Gājī and Chatta of the text.

[5] *i.e.* Ibrāhīm Mīrza, the "Virāhima" of l. 69.

[6] Literally "having abandoned."

l. 72. called Rāṿa Siṃha with bold intention came stronger in battle and at Kāṭhi,[1] oh! the lustre of the Šaka family[2] was defeated by the most distinguished Rājā-of-rājās, [and thus he who had] ever [been] honourable
l. 73. among the Šakas, had his hopes shattered and, having lost his manliness, [became] agitated in [his] heart.

[And when Hakīma[3] and the leaders of the Yavanas[4]
l. 74. with their power subjugated with their forces Lābhapurī[5] like [a city which has] lost all power of resistance, the Indra-among-the-kings making haste [came and] rescued [it].

And that banner of the Šaka family, named Farīdama[6]
l. 75. after creating a disturbance in the Kābila country, was defeated with force by king Rāṿa Siṃha, [and though he was a] staunch hero, he lost [all his] fighting spirit.
l. 76. And thereafter the principal feudatories like Candrasena[7] and others, and king Satobhāra[8], and several other lords of the earth, and the egregious sovereigns of the

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[1] Probably the Katoli of the Map, for which see note to l. 64 above.

[2] *i.e.* the house of Timūr, to which the Mīrzās and also Akbar himself belonged. The term *šaka* is used again in this sense in l. 73 and l. 74.

[3] Mīrzā Muḥammad Ḥakīm, who in 1581 A.D. crossed the Indus and laid siege to Lahor (*Akbarnāma*, iii, p. 508; *Muntakhab*, ii, p. 300). The siege was not pursued, because Akbar in person came to oppose his brother—for such Ḥakīm was—and the latter fled back across the Indus into his province of Kabul. Before starting himself on the expedition, Akbar had sent Rāṿa Siṅgha to the Panjab in advance (*Akbarnāma*, iii, p. 494), and as the Muhammadan historians give clearly to understand that when the Emperor reached Lahor, Ḥakīm was already in flight, it is probably that the claim made by Rāṿa Siṅgha in our inscription to the effect that he rescued Lahor, is founded on truth.

[4] *i.e.* Kabulis.

[5] *i.e.* Lahor.

[6] Farīdūn Khān, the maternal uncle of Mīrzā Muḥammad Ḥakīm, and his chief instigator according to Al Badāonī (*Muntakhab*, ii, 299). After reaching Lahor, as related above, Akbar proceeded to Katak Banaras, on the Indus, and thence despatched an army at the command of Sulṭān Murād to pursue Ḥakīm. In this army Rāṿa Siṅgha was included (*op. cit.*, ii, p. 301; *Akbarnāma*, iii, pp. 518-9). On the 30th July 1581, a detachment of this army was engaged by Ḥakīm and at the same time attacked by Farīdūn Khān in the rear (*Akbarnāma*, iii, pp. 533-4; *Muntakhab*, ii, p. 303), and the rebels obtained some success, but two days afterwards both Ḥakīm and Farīdūn were decisively beaten at Khurd Kabul.

[7] The son of rāu Māla De of Jodhpur, against whom Rāṿa Siṅgha fought from 1574 to 1576, as related above. See note to l. 64.

[8] This can hardly be anybody else but Satra Sāla, the Jāma of Jūnāgadha in Soraṭha, but exactly when Rāṿa Siṅgha defeated him the Muhammadan historians do not say. Satra Sāla was defeated several times by the Imperial generals; once in 1584 A.D. by the Khān Khānan (*Akbarnāma*, iii, pp. 683-4; *Muntakhab*, ii, p. 371), another time in 1589 A.D. by Āʿẓim Khān (*Akbarnāma*, iii, pp. 902-6; *Muntakhab*, ii, pp. 384-5), and a third time, also by Āʿẓim Khān, in 1592 A.D., when Jūnāgadha was taken (*Akbarnāma*, iii, pp. 948-9; *Muntakhab*, ii, p. 392). But in the last-mentioned action Rāṿa Siṅgha could not be present, for he had been

l. 77. Kaccha country [1], were defeated by king Rāya Siṃha and reduced to worshipping his feet.

And after giving him a daughter of theirs according to [his] desire, the other kings pay [to Rāya Siṃha even]
l. 78. an annual tribute, and thus [in return] for being free from fear, they always pay [to him] a tribute [in the form of] in valuable ornaments of gold.

[And he] day after day has indeed made benefactions of
l. 79. different kinds of wealth, elephants, horses, carts, etc., [and also] emeralds, corals, gold, spotless pearls, silver, kine, etc.

l. 80. And the *rājñī* of Rāya Siṃha, Saubhāgyadevī by name, [is] the daughter of rāvaḷa Hari Rāja, the ruler of Jesalameru, and a [very] clever [woman] she [is indeed]. Simi-
l. 81. lar in greatness to Lakṣmī, Gaṅga, Girijā and Sāvitrī [is this] daughter of Hari Rāja, a Gaṅga, [in human form as it were], similar to the Gaṅgā in virtues."

The record of dates with which the inscription closes, consists of a part in verses (two stanzas only) and a part in prose, but the latter is with slight modifications and enlargements only a repetition of the former. As for the part in verses, I have already pointed out above that the second of the two stanzas whereof it consists is out of face where it is, and I have also quoted the authority of the twin inscription to show that this stanza formed part, in origin, of the panegyric of Rāya Siṅgha and came after the third stanza in this panegyric. The substance of the information supplied by the record of dates may be briefly summarized as follows :—

(*a*) In the year Saṃvat 1645, corresponding to the year Śāka 1510, the ninth day of the dark fortnight of Phālguna, which was Thursday, the measurements of the site were taken.

(*b*) The next day, the tenth, which was Friday, the foundations were dug out.

(*c*) The twelfth day of the bright fortnight of the same month of Phālguna, which was Monday, the first stone was laid.

(*d*) And lastly in the year Saṃvat 1650, the sixth day of

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sent, a few months before, to help the Khān Khānan who was fighting a difficult campaign against Jānī Beg of Thattah (*Akbarnāma*, iii, p. 925; *Muntakhab*, loc. cit.). In 1593 A.D. Akbar gave Soraṭha in fief to Rāya Siṅgha (*Muntakhab*, ii, p. 400). Now, it is just possible that the subjugation of the Jāma by Rāya Siṅgha, alluded to in the text of the inscription, refers to the period when the latter was governor of Soraṭha. Otherwise, we should have to suppose that Rāya Siṅgha fought against Satra Sāla either in 1584 A.D. under the Khān Khānan, or in 1589 A.D. under Āʿẓim Khān, but against such a supposition is the circumstance that Abul Faẓal, while mentioning several *amīrs* who took part in the two campaigns just mentioned, is silent about Rāya Siṅgha.

[1] Probably the Khengār of the Muhammadan historians, who was a confederate of Satra Sāla. Cfr. *Akbarnāma*, iii, p. 902.

the bright fortnight of Māgha, which was Thursday, with the completion of this gate, the new fort caused to be built by mahārājādhirājamahārāja Rāya Siṃha, was completed.

I now proceed to give below the full text of the *prašasti* inscription.

1. ॥ ९० ॥ श्रीकृष्णाय[1] नमः ॥ शुक्लांबरधरं विष्णुं शशिवर्णं चतुर्भुजं ।
   प्रसन्नवदनं ध्याये[2](।)त्सर्वविघ्नो-
2. पशांतये ॥ १ ॥ स जयति सिंधुरवदनो देवो यत्पादपंकजस्मरणं ।
   वासरमणिरिव तमसां रा(।)-
3. शिं नाशयति विघ्नानां ॥ २ ॥ श्रीसूर्यवंशप्रसूतानां राज्ञां नानासु-
   चरिचचिचितविचित्रजगतां ज-
4. गतीप्रतिपालनप्राप्तपुरुषार्थचतुष्टयानां निजातुलप्रतापानलज्वालाप्र-
   ज्वालितप्रबलप्रति-
5. पक्षपतंगानां विषमतमदुर्गदुर्गमगिरिगह्वनगाह्वनपरायणसैन्यानां
   दुं(।)दुभिपणवगोमुखझर्झर-
6. भेरीमुखानेकवादित्रनादमिश्रितक[रि]वरघंटारवह्रयवरकवचकन-
   ककिंकिणीरणत्काररथनेमिस्वनोपेत-
7. पारावारोपमानकटकानां तत्तत्तवैरिवनिताकृतस्तुतीनां लोका-
   लोकाचलमेखलितमहीमंडलाखंडला-
8. नां तुलापुरुषप्रधानषोडशमहादानावर्त्तनार्जितसुकृतराशीनामश्व-
   मेधवाजिपेयसौत्रामणिप्र-
9. मुखमहामखकरणप्रवणानामेकादश्यादितपःपरिनिष्ठितानां[3] गंगा-
   दिसकलतीर्थावगाह-
10. नोद्भूतपातकानां चतुराश्रमधर्ममधुराधौरेयाणां श्रुतिस्मृतिलोच-
    नानां कश्यपगोत्राणां कश्यप-
11. वात्सारनैध्रुवेतित्रिप्रवराणां यजुर्व्वेदांतर्गतमाध्यंदिनीयशाखानामा-
    दिराजानां श्रीमदयोध्यादि-
12. विह्वितनरपत्यभिषेकानां(णां?) ह्रयपतिगजपतिनरपतिराजत्रितय-
    चक्रचूडामणीनां बहिःसंसारव्य-
13. वहारवत्त्वे[ऽ]प्यंतर्योगिनां[4] गयादिश्राद्धसंपादनसंतारितपूर्वजानां
    विशदतमपुण्यकीर्त्तीनां परंपरा नि-

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[1] °षा°, [2] यै(।), [3] °क्षि°, [4] यो°,

14. रूप्यते ॥[1]॥ आदौ नारायणो देव आविरासीज्जगत्पतिः। यन्ना-
मस्मरणं पुंसां परमं मंगलायनं। एकार्ण-

15. वजले तस्य प्रयानस्य महाद्युतेः। नाभीह्रदांबुजाद्र(द्व)ह्मा बभूवा-
मितप्रभक्तिमान्। तस्य मानसिकः पुत्रो

16. मरीचिरिति विश्रुतः [।] येन पित्राज्ञया[2] सृष्टिः कृता तपसि
तिष्ठता[3]। तस्य पुत्रः कश्यपो[ऽ]भूत्त्रिकालज्ञान

17. आत्मवान्। यस्य संतानविस्तारैरापूरितमिदं जगत्। तस्माददित्यां
भार्यायामास सूर्यः सुतोत्तमः

18. । भ्रातरौ तस्य [4]संभूताविंद्रोपेंद्रौ गुणाकरौ। कलिकाले दोषजाले
देवेष्वंतर्हितेष्वथ। प्रकाशते नृ-

19. णां भुक्त्यै मुक्त्यै च तरणिः(।) किल। तत्पुत्रः श्राद्धदेवाख्यो मनुरा-
सीत्प्रतापवान्। अयोध्या निर्म्मिता येन को-

20. शले परमा पुरी। योजनानि दश द्वे च रमणीयायता पुरी। योज-
नानि तथा त्रीणि विस्तारे सरयूतटे[5]। यथा श्रु-

21. तीनामादौ हि प्रणवः परिनिष्ठितः[6]। तथा सर्वनरेंद्राणामादौ वैव-
स्वतो[7] मनुः। वैवस्वतमनोरासीदिक्ष्वाकुर्नृप-

22. तिर्म्महान्। श्रुतं प्रकुर्व्वतो घ्राणाद्गुणैर्यो मनुना समः। श्रूयमि-
क्ष्वाकुतनया जज्ञिरे[8] परमाद्भुताः। तेषु ज्येष्ठा[9]स्व-

23. यो जाता विकुक्षिनिमिदंडकाः। विकुक्षेरभवत्पुत्रः पुरंजय इति
स्मृतः। स एव चेंद्रवाहश्च ककुत्स्थ[10]श्चेति कीर्त्तित-

24. ः। अनेना नाम तत्पुत्रो जज्ञे[ऽ]तुलपराक्रमः। विश्वगंधिस्तस्य सुत-
स्ततश्चेंद्रो व्यजायत। युवनाश्वश्च [11] तत्सूनुः सावस्तिस्त-

25. त्सुतो ऽभवत्। सावस्ती[12] निर्म्मिता येन पुरी परमशोभना। बृह-
दश्वस्तस्य सुतस्ततः कुवलयाश्वकः। स एव धुन्ध[13]-

26. मारश्च विख्यातस्तन्निपातनात्। दृढाश्वस्तत्सुतो जज्ञे[14] हर्यश्वस्तस्य
चात्मजः। कृशाश्वस्तस्य पुत्रो [ऽ]भूत्सेनजित्त-

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1 A blank, 2 °न°, 3 °श्रुता,
4 The *guṭikò* reads संजाता°, 5 The*guṭikò* reads विस्तारेण समन्विता,
6 °श्रुत, 7 °स्वतो, 8 यज्ञिरे, 9 °ष्ठा°,
10 °स्थ°, 11 °त्त्वा°, 12 °स्ती; 13 धुध-, 14 यज्ञे,

27. स्य चात्मजः । एतस्य युवनाश्वो [ऽ]भूत्पुत्रः परमधार्मिकः । युवना-
श्वसुतो जज्ञे मांधाता चक्रवर्त्तिराट् । पुरुकुत्स-
28. स्तस्य पुत्र[1]स्त्रसद्दस्युस्ततो [ऽ]भवत् । तस्यानरण्यः पुत्रो ऽभूद्धर्यश्वस्त-
स्य चात्मजः । प्रवण[2]स्तस्य तनयो यस्मादासीत्ति-
29. बंधनः । सत्यव्रतस्तस्य सूनुर्यस्त्रिशंकुरिति श्रुतः । तस्यात्मजो हरि-
श्चंद्रो राजातुलपराक्रमः । हरिश्चंद्रस्य त-
30. नयो रोहितः परिकीर्त्तितः । रोहितस्य सुतो जज्ञे हरितो नाम
पार्थिवः । तस्माच्चंपः समजनि येन चंपापुरी कृ-
31. ता । सुदेवस्तनयस्तस्य विजयस्तस्य चात्मजः । तत्सुतो भरुकः प्रोक्तो
वृकस्तस्यापि चात्मजः । तस्यापि बाहु-
32. को जज्ञे सगरस्तस्य चा[त्म]जः । महायशा महाराजश्चक्रवर्त्ति-
शिरोमणिः । तस्यासमंजसो नाम्ना पुत्रः प-
33. रमधार्मिकः । तस्यांशुमान् सुतो जज्ञे दिलीपस्तस्य चांगजः । ततो
भगीरथो जज्ञे राजा नृपशिरोमणिः । भगी-
34. रथस्य पुत्रस्तु श्रुत इत्यभिविश्रुतः । तस्य नाभः सुतो जातः सिंधु-
द्वीपस्तदात्मजः । अयुतायुः सुतस्तस्य तस्याभू-
35. दृतुपर्णकः । सवकामस्तु तत्पुत्रः[3] सुदासस्तस्य चांगजः । ततो ऽश्मकः[4]
सुतो जज्ञे तज्जन्मा मूलको [ऽ]भवत् । [5]तस्यात्म-
36. जो दशरथस्तस्मादैलविलो [ऽ]भवत् । ततो राजा विश्वसहः ष(ख)ट्वां-
गस्तस्य चात्मजः । ष(ख)ट्वांगपुत्रः समभूद्दीर्घबाहुरिति स्मृ-
37. तः । रघुस्तस्मात्समजनि तस्याजः समजायत । तस्यात्मजो महारा-
ज(।)राजो दशरथः स्मृतः । रामचंद्रस्तस्य सुतो ब्र(ब्र)ह्मादी-
38. नामधीश्वरः । कुशस्तदात्मजस्तस्यातिथिनामा सुतो[ऽ]भवत् । निष-
धस्तस्य पुत्रो [ऽ]भून्नलस्तस्यापि चात्मजः । तत्पुत्रः पुंडरीको[ऽ]
39. भूत्क्षेत्रधन्वा ततो [ऽ]भवत् । देवानीकस्तस्य पुत्रस्ततो ऽहीनो [ऽ]भ-
वत्सुतः । पारियात्रस्तस्य पुत्रस्तस्मादासीद(द्ध)लस्थलः । तस्मादर्कसुतो
40. जातो वज्रनाभस्तदंगजः [।] सगणस्तत्सुतो जा[तो] विधृतिस्तत्सुतो

[1] °द्र°. [2] The *gutikā* reads प्रणव°. [3] °म°, [4] °त्मेऽश्म°, [5] तस्यात्म°.

ऽभवत्। हिरण्यनाभस्तत्पुत्रस्तस्य पुष्यः सुतो [ऽ]भवत्।
ध्रुवसंधिस्ततो जा-

41. तः सुतस्तस्य भवः स्मृतः। सुदर्शनस्तस्य पुत्रस्त्वग्निवर्णस्तदात्मजः [।]
शीघ्रस्तदंगजस्तस्य मरुनामा सुतो [ऽ]भवत्। तस्य [1]प्रसुश्रुत-
स्तस्य संध[2]स्तस्या-

42. प्यमर्षणः [।] अमर्षणस्य तनयः सहस्वानिति विश्रुतः। विश्वभृत्त-
स्तस्य सुतस्तत आस प्रसेनजित्[3]। तक्षक-

43. स्तनयस्तस्य पुत्रस्तस्य बृहद्बलः[4]। बृहद्बलस्य तनयो बृहद्रण[5] इति
श्रुतः। गुरुक्रियस्तस्य पुत्रो वत्सवृद्धस्ततो [ऽ]भ-

44. वत्। प्रीतिव्योमस्ततो जातस्ततो भानुर्व्यजायत। विश्वको [ऽ]भ
ततो जज्ञे ततो [ऽ]भूद्वाहिनीपतिः। सहदेवस्ततो जातस्ततो
वीरो व्य-

45. जायत [।] वीरस्य बृहदश्वो [ऽ]भूत्तस्याभूद्भानुमान् सुतः। प्रतीकाश्वो
भानुमतः सुप्रतीको [ऽ]भ तत्सुतः। तस्याभून्मरुदेवाख्यः

46. सुनक्षत्रस्ततो [ऽ]भवत्। पुष्करस्तस्य तनयस्तस्याभूदंतरिक्षकः[6]।[7]
अंतरिक्षसुतो जज्ञे सुतपा नाम नामतः [।] अमित्रजित्तस्य

47. सुतो बृहद्भानुस्तदात्मजः। तस्य बर्हि[ः] सुतो नाम्ना तस्य पुत्रः कृतं-
जयः। कृतंजयस्य तनयो रणंजय[8] इति श्रुतः। तस्यांगजः संजयो

48. [ऽ]भूत्तस्य श्रावोंगजो [ऽ]भवत्। शुद्धोदस्तस्य तनयो लांगुलस्तत्सुतः
स्मृतः। प्रसेनजित्तस्य सुतः क्षुद्रकस्तस्य नंदनः। रणकस्त-

49. स्य तनयः सुरथस्तस्य चात्मजः। सुमित्रस्तनयस्तस्य महीमंडलपाल-
कः। एवं क्रमेण नृपतिः[9] कन्यकुब्जे महायशाः। पदार्थ

50. इति विख्यातो धर्मपालनतत्परः। पदार्थस्य सुतो जातो राजा
ज्ञानपतिः प्रभुः। तदंगजस्तु गंगनाथो भरतस्तस्य चात्मजः। त-

51. स्य माहात्म्यममलं गीयते[10] देवमानवैः। भरतस्य महेंद्रस्य पुंज-
राजः सुतो [ऽ]भवत्। पुंजराजस्य नृपतेर्वंभनामा सुतो [ऽ]भव-

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[1] ॰प्रयु॰, *Sic.* The *gutikā* reads संधिस्त॰, which is evidently the correct reading, [3] प्रसे॰, [4] ॰द्बलः, [5] ॰द्रण, [6] 'दे', [7] ॥, [8] ॰यः, [9] ॰ति, [10] गायं॰,

52. त्। अजेयचंद्रस्तत्पुत्रो ऽभडयश्चस्तदात्मजः[1]। तस्माद्विजयचंद्रो [ऽ]भू-
ज्जयचंद्रस्ततो [ऽ]भवत्। वरदायीसेननामा तत्पुत्रो ऽतुल-
53. विक्रमः। तदात्मजः सीतरामो रामभक्तिपरायणः। सीतरामस्य तन-
यो नृपचक्रशिरोमणिः। राजा[2] सीह इति ख्यातः शौर्य्य-
54. वीर्य्यसमन्वितः। तस्मादभूदासधामो धूहडो नृपतिस्ततः। तदंगजो
रायपालः क्षितिपालनतत्परः। नृपः कान्हस्तस्य[3] पुत्रो
55. जाल्हणस्तस्य चात्मजः। [राय]क्षाडास्तस्य[4] पुत्रो रायतीडास्त[5]दं-
गजः। सलखा नृपतिस्तस्य पुत्रः प्रबलशासनः। श्रीरायवी-
56. रमस्तस्य पुत्रश्चंडप्रतापवान्। चामुंडरायस्तत्पुत्रो रणमल्लस्तदंगजः।
रणमल्लसुतो जज्ञे योधरायः प्रतापवान्। य-
57. त्पराक्रममाला च[6] सांप्रतं गीयते क्षितौ। तदंगजन्मा ऽभवद्वि-
कीर्त्तिर्महोपतिर्विक्रमनामधेयः [।] जित्वा रिपून् येन पु-
58. रं[7] पुरोत्तमं निवासितं नित्यसुखप्रदायकं। श्रीविक्रमाख्यस्य नृपस्य
पुत्रः श्रीलूणकर्णो[8] [ऽ]भिनवो हि कर्णः। तदंगजा-
59. तो नृपतिप्रधानः श्रीजैत्रसिंहो [ऽ]हितनागसिंहः। तदात्मजः
कल्पतरूपमानः कल्याणमल्लो [ऽ]खिलशु-
60. चुश्लोकः। श्रीरायसिंहस्तनुजो[9] [ऽ]स्य राजा विराजते धर्मपथस्य
गोप्ता। उर्वी येन विचिचिता सुचरितैरंभोधि-
61. संवेष्टिता चस्तारातिवधूजनैरतिभयाद्यः कीर्त्तितो [ऽ]हर्निशं। औ-
तस्मार्त्तविचारकारकमतिः कल्पद्रुमो
62. भूतले सो [ऽ]यं राजशिरोमणिर्विजयते श्रीरायसिंहो नृपः॥
(निजभुजबलेन महतो विनि[10]र्जिता येन)[11] गौ-
63. र्जरी सेना। येनार्बुदाधिनाथो धर्मद्वारेण निर्म्मुक्तः॥ उग्रो गिरि-
र्ग[12]हीतस्तथा परावर्त्तितं च पुरं। नाम्ना शि-

[1] The *guṭikò* has the substitute ऽमडयश्चस्ततोभवत्.
[2] The *guṭikò* reads राय, [3] कान्ह त०, [4] क्षाडात०, [5] तीडात०,
[6] व। [7] *Guṭikò*: पुरी, [8] ०र्णो:, [9] ०नुसुजो,
[10] ०न:, [11] For the words in brackets the *guṭikò* substitutes: श्रीमदकब्बरसाहेरग्रे विजिता हि. [12] ०ग्र०,

64. वायनं तत्तथा बलोच्चा[1] बलाद्बुद्धाः[1]। येन योधपुराद्धाव्य(?) निज-
बाऊबलेन च। यायिलग्राम आगत्य[2]

65. हता उलकनंदनाः।[3](महींद्र मौलिरत्नेन)[3] काबिलाधीश्वरो जितः।
येन (:)तस्य चरित्राब्धेः पारं को वे-

66. त्ति मानवः।[4] तुलापुरुषमुख्यानि महादानानि येन च। प्रदत्तानि
द्विजाग्रेभ्यः[5] स जीयात्सिंहभूपतिः॥

67. इति श्रीरायसिंहपूर्वजगुणवर्ण्णनं॥१॥ येन प्राक्प्रविधूनिता [ऽ]र्ब्बु-
द[6]गिरिर्नीतास्तदीशाः पदोपास्तिं संयति[7]

68. संविजित्य बऊप्पो वीर्य्याद्विजाद्या अपि। यश्चाजौ निजघान
गौर्ज्जरधराविध्वंस्यु[8] लूकात्मजं बद्धा[10]नीय

69. च तद्बलात्सुविपुला(त् श्रीरायसिंहः क्षती)[11]॥२॥ तद्भ्राता (हि पुन-
र्व्वि)[12]राहिम इति प्राप्तो विधुन्वन्[13] धरां रुद्धा[14]ध्वान-

70. मनर्ग्गलः स च मृधा द्राग्येन[15] निर्ज्जीग्मितः। जित्वा सिंधुसरित्पती-
न्बलवतश्चक्षाख्यगाजीमुखान् कीर्त्तिं स्वां

71. निरघोषयच्छ[16]ग्मिकरस्कारां च यस्तन्मुखैः॥३॥ इभ्रामाभिधभू-
मिपः स च बलाच्छ्रीरायसिंहाभिधैर्भूतिं

72. स्वां परिहृत्य धृष्टमनसागच्छद्बलीयान्युधि। काठौ आः शुक[17]वंश-
दीपक[18]जितः श्रीराजराजोत्तमैर्भग्ना-

73. शो गतवीर्य्यविह्वलमतिर्म्मान्यः शुकानां सदा॥१॥ यदा हकीमै-
र्य्यवनाधिपैश्च स्वतेजसा लाभपु-

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[1] व०, [2] *Guṭikò* **ग्राममागत्य,**

[3] For the passage in brackets the *guṭikò* substitutes: **पातिसाहिनिदेशेन**

[4] The *guṭikò* in this place inserts the śloka: **धर्मार्थज्ञानतत्त्वज्ञो यथा शक्रो ऽपरो भुवि। क्षीरैरैरपि संसेव्यः सर्वाभरणभूषितैः॥६६॥** [5] °ग्रे°,

[6] °ताब्बुद्र°. The *guṭikò* substutes °विधोर्नितोर्ब्बुद° (*sic*),

[7] °ग्रा, [8] संगति, [9] °स्य°, [10] °ध्वा°,

[11] For the part in brackets the twin inscription substitutes: **च्छ्रीपा-तिसाहि[:] पुरः,** which is the original and correct reading.

[12] Read **ऽच्छिपुरं वि°,** with the twin inscription,

[13] विध°, [14] °ध्वा°, [15] द्राक्षेन, [16] °ह°, [17] **आग्रशुक°,**

[18] For **दीपको,** but the metre will not allow such a correction,

74. री स्वसैन्यैः। संमुद्रिता व्यक्तपराक्रमां[1] वै कृत्वा झटत्तां मुमुचे
न्टपेंद्रः ॥ २ ॥ फरीदमाह्वः प्रक[2]वंप्रके-

75. तुः [2]काबिल्लदेशे कलहं विधाय। श्रीरायसिंहेन न्टपेण भग्नो बलेन
धीरो गतवीर्य्यवीरः ॥ ३ ॥ ततश्चं

76. द्रसेनादिजामांत[3]मुख्याः सतोभारभूपाद्यनेकाः क्षितीशाः। वरा
कच्छदेशाधिपाः संविजित्य क्र-

77. मोपास्तिनीता न्टपै रायसिंहैः ॥ ४ ॥ दत्त्वा[4] कन्यां स्वस्य कामानुरू-
पामन्ये भूपा वार्षिकं दत्तवंतः। मुंचं

78. त्येवं सर्व्वदा सत्करंभोम्मुक्तानर्घ्यान्भूषणान्[5] स्वर्णसत्कान् ॥ ५ ॥ विवि-
धद्रव्यगजाश्वरथादिभिर्म्मरकतै-

79. रपि विद्रुमहेमभिः। विमलमौक्तिकरौप्यगवादिभिर्ह्यनुदिनं खलु
दानमकारि सः ॥ ६ ॥ जेसलमे-

80. रुमहीपतिरावलहरिराजनंदिनी निपुणा[।] श्रीरायसिंहराज्ञी
नाम्ना सौभाग्यदेवी सा ॥ १ [॥] ल-

81. क्ष्मीगंगागिरिजासावित्रीभिः समानमाहात्म्या[।] श्रीहरिराजतनूज,
गंगातुल्या गुणैर्गंगा ॥ २ [॥]

82. वर्षे पंचचतूरसक्षितिमिते मासे तपस्ये सिते[6] पक्षे देवगुरौ
नवम्युपगते व्याघातमैचीयुजि। प्राक्सू-

83. र्यं विततं भगौ च दशमीयुक्ते [7]स्वपक्षे खनिर्द्वादश्यद्धि सिते सपु-
ष्यप्रश्निनि न्यस्तः शिलासंचयः। १।

84. स श्रीविक्रमभूभुजः समयतो व्योमेषुषड्भूमिते वर्षे मासि तप[स्य]-
थोज्ज्व[8]लतिथौ षष्ठां[9] च वारे गुरौ[10]। रेव-

85. त्यामपि साध्यनामनि तथा योगे च लग्ने शुभे दुर्गं नव्यमकार-
यन्नृपवरः श्रीरायसिंहो [ऽ]ग्रणीः ॥ १ ॥ अ

86. थ सं[11]वत्सरे ऽस्मिन्नृपतिविक्रमादित्यराज्यात्[12] संवत् १९४५ वर्षे
शाके १५१० प्रवर्त्तमाने महामहःप्र-

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1 ०मे, 2 बिल०, 3 *Gutiko*: ०रामांत०, 4 ०ला,
5 ०णात्, 6 शिते, 7 ०स्व०, 8 ०ज्व०,
9 ०ष्ठ्यां, 10 Twin inscription: गुरोः, 11 संव०, 12 ॥,

87. दायिनि फाल्गुने मासे कृष्णपक्षे नवम्यां तिथौ वृहस्पतिवारे अनु-
राधानक्षत्रे व्याघातयोगे श्रीदुर्गस्य
88. प्रथमं सूत्रपातः कृतः॥ ततो दशमी १० शुक्रवारे ज्येष्ठानंतरं[1]
मूल-नक्षत्रे दिनभुक्तघटिका[2] २३। ५५
89. उपरि दुर्गस्य खातः कृतः॥ अथ संवत्[3] १९४५ वर्षे फाल्गुन[4]सुदि
१२ दादश्यां सोमे पुष्यनक्ष-
90. त्रे शोभननाम्नि योगे दुर्गस्य शिलान्यासः कृतः॥ अथ संवत्
१९५० वर्षे माघमासे शुक्लपक्षे
91. षष्ठ्यां[5] गुरौ रेवतीनक्षत्रे साध्यनाम्नि योगे महा[6]राजाधिराज-
महाराजश्रीश्रीश्री २ [7]रायसिंहे-
92. न दुर्गप्रतोली संपूर्णीकारिता सा च सुचिरस्थायिनी भवतु॥

L. P. TESSITORI.

Bikaner, 16*th March*, 1919.

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[1] ज्येष्ठा॰, [2] ॰काः, [3] संवत्, [4] *Guṭikò* ॰नि॰, [5] ॰ष्ठ्यां,
[6] *Guṭikò*: श्रीमन्ना, [7] *Guṭikò*: श्रीरा॰'

The Bikaner *prasasti* of Rājā Rāya Singha (Samvat 1650).

Proceedings of the Ordinary General Meetings, 1920.

JANUARY, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 7th January 1920, at 9-15 P.M.

MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, C.I.E., M.A., F.A.S.B., President, in the chair.

The following members were present :—

Dr. N. Annandale, Dr. W. A. K. Christie, Mr. Johan van Manen, Dr. H. W. B. Moreno, Major R. B. Seymour Sewell, I.M.S., Pandit Amulya Charan Ghosh, Vidyabhusana.

The minutes of the last meeting were read and confirmed.

Twenty-one presentations of books, etc., were announced.

The General Secretary reported the death of Dr. L. P. Tessitori.

The following gentlemen were balloted for and elected as ordinary members :—

Mr. Hassan Suhrawardy, M.D., L.M., F.R C.S.I., District Medical Officer, Lillooah, E.I.R., proposed by the Hon. Justice Sir Asutosh Mukhopadhyaya, Kt., seconded by Dr. P. J. Brühl ; *Mr. S. Parameshara Aiyar*, Under Secretary to the Government of Travancore and Private Secretary to the Dewan, Trivandram, Travancore proposed by Mahamahopadhyaya Haraprasad Shastri. seconded by Dr. W. A. K. Christie.

The following gentlemen were proposed, on behalf of the Council, as Honorary Fellows :—

Sir Charles Eliot, K.C.M.G., C.B., M.A., LL.D., D.C.L. ; Prof. T. W. Rhys Davids, LL.D., Ph.D., D.Sc. ; Prof. Sylvain Levi ; Sir Mare Aurel Stein, K.C.I.E., Ph.D., D.Litt., D.Sc. ; Prof. A. Foucher, D.Litt. ; Arthur Keith, Esq., M.D., F.R.C.S., LL.D., F.R.S. ; R. D. Oldham, Esq., F.R.S., F.G.S., F.R.G.S. ; Sir David Prain, Kt., C.M.G., C.I.E., M.A., M.B., LL.D., F.R.S.E., F.L.S., F.R.S., F.Z.S., M.R.I.A., I.M.S. ; Sir Joseph Larmor, Kt., M.P., M.A., D.Sc., LL.D., D.C.L., F.R.S., F.R.A.S. ; Sir James Frazer, Kt., D.C.L., LL.D., D.Litt. ; Prof. J. Takakusu.

Sir Charles Norton Edgecumbe Eliot.

Sir Charles Norton Edgecumbe Eliot, K.C.M.G., C.B., M.A., LL.D., D.C.L., is a distinguished student of zoology.

philology and international politics. In zoology he is recognized as one of the chief living authorities on the *Nudibranch* molluscs, while in philology he has published a grammar of the Finnish language and given evidence of an extraordinarily wide acquaintance with languages of the Far East in various books of studies. In the course of his career he has held the posts of British High Commissioner of Samoa, His Majesty's Commissioner and Commander-in-Chief for the British East Africa Protectorate, Vice-Chancellor of the University of Sheffield and the first Principal of the University of Hongkong. He is now British Ambassador in Japan.

Thomas William Rhys Davids.

Thomas William Rhys Davids, son of Rev. T. W. Rhys Davids, was born at Colchester on the 12th of May, 1843. He was educated at Brighton and subsequently graduated from the University of Breslau; in 1866, he passed the Civil Service examination and was gazetted to Ceylon, where he won much fame and popularity as an able and conscientious officer. It was in Ceylon that he felt attracted to the study of Pali and Buddhist Literature which he afterwards made it his life-work to investigate and popularise. During his stay in the East he lost no opportunity of gathering as much first-hand information on these subjects as he possibly could. His thoughtful and diligent researches were from time to time published in the Journal of the Royal Asiatic Society and other important papers and helped to create a taste for the study of Buddhism and the Pali language. He returned to London and became a Barrister of the Middle Temple in 1877. In 1882 he founded the Pali Text Society and in 1895 the Oriental Translation Fund. In 1887 he was appointed Secretary and Librarian of the Royal Asiatic Society but resigned in 1905, when he accepted the Chair of Comparative Religion at Manchester. In 1894 he married Caroline Augusta, a highly gifted, intellectual lady with tastes similar to his own. She is the author of "Buddhist Psychological Ethics," "Psalms of the Early Buddhists," "Buddhism," etc. She also collaborated with her husband in the composition of some of his most valuable works. The following is a list of his most important and best known works:—

"Buddhism," containing a sketch of the life of Gautama Buddha, published in 1878 for the London Society for the Promotion of Christian Knowledge.

"Buddhist Birth Stories, Vol. I" (1880), a collection of 40 Jatakas or Birth-Stories consisting of fairy tales, parables, fables, riddles and comic and moral stories, some bearing a striking resemblance to similar ones current in the west.

"Buddhist Suttas from the Pali" (1881).

"Ancient Coins and Measures of Ceylon" (1877).

"Hibbert Lectures" (1881). Six in number, of which the first and most important considers the proper place of Buddhism in the development of religious thought, and the third gives a sound and erudite exposition of the theory of Karma.

"Sacred Books of the East," Buddhist Suttas

"Dialogues of the Buddha" (1899 and 1910).

"Buddhist India" (1902).

"Early Buddhism" (1908), etc.

Few writers have contributed so much to the knowledge of Buddhism as he. The writer of this monograph had the honour of coming in personal touch with him when he came to India in 1904 to pursue his investigations and researches at Kapilavastu.

Prof. Sylvain Levi.

Prof. Sylvain Levi, a distinguished oriental scholar, was an inhabitant of *Alsace*. His family came to Paris after the occupation of that country by the Germans. The Professor early distinguished himself by his exhaustive work entitled "Théâtre Indien," which was an improvement on H. H. Wilson's Hindu Theatre. His work on "La doctrine du sacrifice dans les Brahamanas" laid the foundation of the study of the Vedic sacrifices in Europe. In 1897 he came to India and visited Nepal where he collected some of the rarest Buddhist and Hindu manuscripts, and wrote his history of Nepal. Of the manuscripts collected, he has edited and translated the Mahāyāna Sūtrālankāra, a work on the Yogācāra system of Philosophy of the Buddhist by Asanga, the brother of Vasubyandu, in the 5th Century A.D. He is now engaged in deciphering the vast mass of manuscripts and other materials unearthed in the deserts of Yaklamakan and Gobi in Central Asia. His Chinese studies have resulted in throwing light on many obscure points of the history of India and her literature.

Sir Marc Aurel Stein.

INDIA.

1892. Rajatarangini, ed. of Sanskrit text.
1900. Rajatarangini, annotated transl., 2 Vols.
1905. Archæological Survey Progress Report.

CENTRAL ASIA.

First Expedition.

1903. Sand-buried Ruins of Khotan, 1 Vol.
1907. Ancient Khotan, 2 Vols.
1908. Mountain Panoramas (Royal Geogr. Soc.).

Second Expedition.

1912. Ruins of Desert Cathay, 2 Vols.

In preparation, Serindia, the scientific account of the second expedition.

Third Expedition.

1917. A third Journey of Exploration, etc., in Ind. Ant., Vol. xlvi (1917), June—November inclusive (reprinted from Journ. Roy. Geogr. Soc.).

A. Foucher.

Professor A. Foucher of the University of Paris is one of the foremost living authorities on Indian Art and Archæology. Amongst his numerous contributions may be mentioned in particular his comprehensive treatise on the Græco-Buddhist Art of Gandhara (2 Vols., 1905 and 1918). His other works treat of Buddhist Iconography in India (2 Vols., 1901 and 1905), and the Indo-Afghan Frontier (1900). His notes on the Ancient Geography of Gandhara puplished in 1901 have been translated into English by Mr. Hargreaves. A series of papers published by him between 1908 and 1912 on Buddhist Art in India and Java have been translated into English by Mr. L. A. Thomas and Mr. F. W. Thomas and were published in a handsome illustrated volume in 1917.

Arthur Keith.

Fellow of the Royal Society, Conservator of the Museum and Hunterian Professor, Royal College of Surgeons of England.
Secretary, Anatomical Society of Great Britain, 1899-1902.
President, Royal Anthropological Institute, 1912–14.
Member de la Société d'Anthropologie de Paris, 1913.
Publications—various articles in Scientific Journals.
Introduction to the Study of the Anthropoid Apes, 1896.
Human Embryology and Morphology, 1901.
Assistant Editor, Treves' Surgical and Applied Anatomy.
Ancient Types of Man, 1911.
The Human Body, 1912.
Antiquity of Man, 1914.

Richard Dixon Oldham.

Richard Dixon Oldham, F.R.S., son of the late Dr. T. Oldham, first Director, joined the Geological Survey of India in the year 1879 and retired in 1903. During his official career he published many papers dealing with geology and covering a wide field of subjects. Students of Indian geology owe him a debt of gratitude for a "Bibliography of

Indian Geology" and the second edition of the "Manual of the Geology of India." The study of seismological questions seems to have attracted him at an early date and his publications culminating in a recent speculation on the "Constitution of the Earth as revealed by Earthquakes" have placed him in the fore-front of living seismologists. Since his retirement he has always taken a great interest in the problems of Indian geology and he has recently summarised from the geological and geodetic standpoints the origin of the Himalaya mountains and the Gangetic trough.

Mr. Oldham was a member of the Asiatic Society while he was in India, and served on the Council from 1897-99 and as Vice-President in 1902 and 1903.

Sir David Prain.

Sir David Prain was Curator of the Herbarium of the Royal Botanic Gardens, Sibpur, from 1887 to 1898 and Superintendent of the Gardens from 1898 to 1905. From 1905 he has been Director of the Royal Botanic Gardens of Kew.

He has published monographs and papers on :—

The species of Perticularis of the Indian Empire, the species of Dalbergia, the genus Croyaphora, the genus Gomphostemma, the vegetation of the Coco Group, the botany of the Laccadives, and numerous other papers on botanical subjects of systematic and economical importance.

Sir Joseph Larmor.

Sir Joseph Larmor was born in 1857, and graduated as Senior Wrangler and first Smith's Prizeman in 1880, Sir Joseph John Thomson being second Wrangler and second Smith's Prizeman. For five years after graduation, he held the Chair of Natural Philosophy in Queen's College, Galway, and in Queen's University, Ireland. He next became Lecturer in Mathematics at Cambridge from 1885 to 1903, when, upon the death of Sir George Stokes, he was appointed Lucasian Professor of Mathematics. He has published numerous original papers on Mathematics and Physics and a remarkable work on Aether and Matter which was awarded the Adams Prize in 1899. In recognition of the high merit of his contributions to Mathematics and Mathematical Physics, the Cambridge Philosophical Society awarded him the Hopkins Prize in 1897, the London Mathematical Society the DeMorgan Medal in 1914, the Manchester Literary and Philosophical Society the Wilde Medal in 1914, and the Royal Society a Royal Medal in 1915. He is an Honorary Member of numerous scientific Societies and Academies.

Sir James George Frazer.

Sir James George Frazer was born in 1854; he stands in the front rank of Anthropologists of the present generation. He began life as a Barrister, but since 1907 he has been Professor of Social Anthropology at Liverpool. His great work, known as the "Golden Bough," was first published in 1890. A second edition, greatly enlarged, was brought out in 1900. Since then the work has been completely recast and published in twelve volumes. His other works are on the Early History of the Kingship, Psyche's Task, Totemism and Exogamy (in 4 Vols), and Folk-lore in the Old Testament (in 3 Vols.). In 1911 he delivered the Gifford Lectures on the Belief in Immortality and the Worship of the Dead. Besides his work in Anthropology, he has been a devoted student of Greek and has published a monumental work on Pausanias in 6 Vols., which includes a translation and a commentary. The variety of his literary Interests is indicated by his well-known volumes of annotated selections from Sallust, Pausanius, the Bible, the letters of Cowper and the essays of Addison. He is a Fellow of the British Academy, an Honorary Fellow of the Royal Society of Edinburgh and a corresponding member of the Royal Prussian Academy of Science.

Prof. J. Takakusu.

Prof. Takakusu of Japan is a distinguished Oriental scholar. He made his mark by the publication of the translation of the Amitāyur-dhyāna-Sūtra in the Sacred Books of the East Series. He received his education in England and is well known for his translation with critical notes of It-sing's Record of the Buddhist religion as practised in India and the Malay Archipelago. It is a record of the Buddhist practices in accordance with Arya-Mula-Sawāstivadanīkâya with its three sub-divisions Dharmagupta, Mahisasaka and Kasyapiya. prevailing in Udyana, Kharachara and Kustuna. This is a most interesting book on Buddhist Vinaya as prevailing in the 7th century A.D. Prof. Takakusu's articles in the J.R.A.S. are most illuminating; that on Paramartha's life of Vasubandhu written in the 5th century describes the palmiest days of Indian philosophic thought both Hindu and Buddhist.

The Hon. Justice Sir Asutosh Mukhapadhyaya communicated an obituary notice of Lord Rayleigh, an Honorary Fellow of the Society.

John William Strutt, Baron Rayleigh, was born in 1842. He graduated as Senior Wrangler and first Smith's Prizeman in the University of Cambridge in 1865 and was elected to a Fellowship in Trinity College the very next year. On the death of Professor James Clerk Maxwell he was appointed

Cavendish Professor of Experimental Physics at Cambridge in 1879. The strain however proved too great and he resigned the Professorship in 1884, when he was succeeded by Mr. (now Sir) Joseph John Thomson. He subsequently became Professor of Natural Philosophy at the Royal Institution in 1887, but retired in 1905. He was a Fellow of the Royal Society, and finally became its President. He was also a medallist of the Royal Society (Copley, Royal and Rumford) and a Nobel Laureate in Physics (1904). Lord Rayleigh attained a world-wide reputation as a Mathematician and Physicist of the highest order, and learned Societies delighted to include his name in the list of their Honorary Fellows and Corresponding Members. The scientific papers published by him exceed four hundred in number. The collection published under his supervision by the Cambridge University Press occupies five substantial volumes. They contain 349 papers, of which the first was published in 1869 and the last in 1910. It is estimated that the papers published subsequently will cover at least one additional volume. There is no department of Physics which has not been enriched by Lord Rayleigh. But a very considerable proportion relate to what may be called the Theory of Vibrations in Solids, Liquids and Gases. How wide his activities were may be judged from the epoch-making memoir on Argon composed in collaboration with the late Professor Ramsay. Indeed his hand is visible when we study the history of the development of Modern Physics in the domains of Electricity and Magnetism, Optics, Acoustics, Thermo-Dynamics, Dynamical Theory of Gases, Constitution of Matter, Hydro-Dynamics, Capillarity, Elasticity and the Foundations of Mechanics. His great treatise on the Theory of Sound has played a very important part in the unification and development of our knowledge of that subject; and like everything else produced by him bears testimony to a rare combination of mathematical acumen and experimental skill. Lord Rayleigh was appointed to the Order of Merit and was a Privy Councillor, and the French Government created him an Officer of the Legion of Honour. Upon the death of the Duke of Cavendish, he was elected Chancellor of the University of Cambridge.

FEBRUARY, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 4th February, 1920, at 9-15 P.M.

The minutes of the last meeting were read and confirmed.

Forty-one presentations of books, etc., were announced.

The following gentlemen were balloted for and elected as ordinary members :—

Mr. H. Brian C. Hill, Tea Planter, Assam, late attached 30th Lancers, Chabua P.O., Upper Assam, proposed by Dr. W. A. K. Christie, seconded by Dr. N. Annandale ; *Mr. W. I. Keir*. Assistant Architect to the Government of Bengal, Sibpur Engineering College, proposed by Dr. H. G. Carter, seconded by Dr. N. Annandale : *Mr. Brij Narayan*. Assistant, Q.M.G.'s Office, Army Headquarters, Alice Villa, Simla, proposed by Mr. L. F. Rushbrook William, seconded by Mr. Ram Prasad Tripathi.

The following gentlemen were balloted for and elected as Honorary Fellows :—

Sir Charles Eliot, K.C.M.G., C.B., M.A., LL.D., D.C.L. ; Prof. T. W. Rhys Davids, LL.D., Ph.D., D.Sc. ; Prof. Sylvain Levi ; Sir Marc Aurel Stein, K.C.I.E., Ph.D., D.Litt., D.Sc. ; Prof. A. Foucher, D.Litt., ; Arthur Keith, Esq., M.D., F.R.C.S., LL.D., F.R.S. ; Mr. R. D. Oldham, F.R.S., F.G.S., F.R.G.S. ; Sir David Prain, Kt, C.M.G., C.I.E., M.A., M.B., LL.D., F.R.S.E., F.L.S., F.R.S., F.Z.S., M.R.I.A., I.M.S. ; Sir Joseph Larmor, Kt., M.P., M.A., D.Sc., LL.D., D.C.L., F.R.S., F.R.A.S. ; Sir James Frazer, Kt., D.C.L., LL.D., D.Litt. ; Prof. J. Takakusu.

The President drew attention to the following exhibitions :—

1. A copy of Rennell's Atlas of 1781.—J. G. Cumming, Esq.
2. An engraved stone-statue of Ganesa with inscriptions in Bengali and Telegu.—Ganapati Sircar, Esq.
3. A collection of sacrificial utensils, and ancient surgical instruments ; a Burmese Golden Book and a Silver Book ; Tibetan-Italian Dictionary, 1720-40 ; Italian-Tibetan Payma Karpo ; a translation of the Sad-dharma Pandarika in Tibetan.—The President.
4. (1) A picture of Kesar from China.
   (2) A Chaitya from Ceylon.
   (3) Tibetan manuscripts mounted in gold.—Mahamahopadhyaya Satis Chandra Vidyabhusana.
5. Six Albums, with mounted photographs illustrating Indian archæology. The subjects are (a) (1) Aivalli, (2) Pattadakal, (3) Bijapur, (4) Mahintale, etc., (5) Sanchi. etc., (6) Ellora, etc., (b) A plate-work on Pompeii (by Niccolin), (c) A three-volume plate-work on Arabic Art, d'Avennes.—J. van Manen, Esq
6. Quranic Manuscript.—A. H. Harley, Esq.
7. Coloured representations of Indian birds.—S. C Law, Esq.

8. Photographs illustrating the vegetation of Barkuda, an Island in the Chilka Lake.—**Dr. N. Annandale.**
9. A series of drawings from interesting and attractive cercariae with a photograph of the locality where the Schistosome cercaria was first discovered in the neighbourhood of Calcutta.—Major R. B. S. Sewell.
10. A Tigari, a peculiar type of a coracle-like structure made of clay used as a boat.—Baini Prashad, Esq.
11. (1) Some Titanosaur remains from Jubbulpore, collected by Dr. Matley.
    (2) The Adhiket meteorite.
    (3) Bilaspur limestone, suitable for lithographic purposes; and a slab of Solenhofen stone for comparison.
    (4) A series of Indian wolfram, tin and lead-zinc minerals, with foreign specimens for comparison.—The Geological Survey of India.
12. Diagram illustrating the relationship and the geological distribution of the genera, subgenera and sections of the Cyprædae, and their probable genealogical connection. Specimens of the various classificatory divisions also exhibited.—E. Vredenburg, Esq.
13. (1) Inscribed Prehistoric Pottery (from Bhita, Allahabad).
    (2) Free-hand drawing on paper of Gupta period (from C. Asia).
    (3) New type of Kalachuri gold coin of 11th century A.D., bearing the king's name "Udayadeva."
    (4) New type of Nepal silver coin bearing the King's name "Dalamardanasāhadeva," Samvat 1888 = 1831 A.D.
    (5) New type of Nepal silver coin bearing the Queen's name Rājendra Lakshmī Devī, Samvat 1691 A.D.
    (6) Rare gold coins of Sallakshanapā, Ajayapala and Mahipala of the Tomara dynasty of Ajmir and Delhi of about 978-1003 A.D.—D. R. Bhandarkar, Esq.

MARCH, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 3rd March, 1920, at 9-15 P.M.

MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, C.I.E., M.A., F.A.R.S., President, in the chair.

The following members were present :—

Maulavi Abdul Wali, Dr. W. A. K. Christie, The Hon. Mr. J. G. Cumming, Mr. H. G. Graves, Mr. J. van Manen,

Dr. H. W. B. Moreno, Dr. K. S. Ray, Babu Sasadhar Roy, Major R. B. Seymour Sewell, Dr. Beni Prashad.

Visitors :—Mr. S. N. Roy Chowdhury, Mrs. Sewell.

The minutes of the last meeting were read and confirmed.

Thirty-nine presentations of books, etc., were announced.

The General Secretary reported that Mr. Ram Avatar Pande (retd. Judge) of Mirzapore, an ordinary member, had expressed a desire to withdraw from the Society.

The President announced that Rai Bahadur Charu Ch. Chaudhuri and Babu Dharani Dhur Dutta being largely in arrears with their subscriptions had been declared defaulters and that their names would be posted in accordance with Rule 38.

The General Secretary read the names of the following gentlemen who had been appointed to serve on the various committees during 1920.

Finance Committee.

President, Treasurer, Secretary } *ex-officio.*
Dr. N. Annandale.
Mahamahopadhyaya Satis Chandra Vidyabhusana.
The Hon. Justice Sir Asutosh Mukhopadhyaya, Kt.

Library Committee.

President, Treasurer, Secretary, Anthropological Secretary, Biological Secretary, Physical Science Secretary, The two Philological Secretaries, Medical Secretary, Hon. Librarian } *Ex-officio.*
J. van Manen, Esq.
Hon. Mr. W. C. Wordsworth.

Philological Committee.

President, Treasurer, Secretary } *ex-officio.*
Dr. Satis Chandra Vidyabhusana.
The Hon. Justice Sir Asutosh Mukhopadhyaya, Kt.

Babu Nilmani Chakravarti.
A. H. Harley, Esq., M.A.
Aga Muhamad Kazim Shirazi.
The Hon. Dr. A Suhrawardy, M.A.
H. G. Carter, Esq., M.B.
Hon. Mr. W. C. Wordsworth.

Hon. Numismatist.

Lt.-Col. H. Nevill, I.C.S.

Hon. Joint Secretaries, Science Congress.

Dr. J. L. Simonsen.
Prof. P. S. Macmahon.

Building Committee

President, Treasurer, Secretary } *ex-officio.*
The Hon. Justice Sir Asutosh Mukhopadhyaya, Kt.
Dr. H. H. Hayden.
H A. Crouch, Esq.
W. W. K. Page, Esq.

Publication Committee.

President, Treasurer, Secretary, Anthropological Secretary, Biological Secretary, Physical Science Secretary, The two Philological Secretaries, Medical Secretary, Honorary Librarian } *ex-officio.*

The following gentlemen were balloted for as ordinary members :—

(1) *The Rt. Hon'ble Lawrence John Lumley Dundas*, Earl of Ronaldshay, G.C.I.E., Governor of Bengal, proposed by Mahamahopadhyaya Haraprasad Shastri, C.I.E., seconded by Dr. W. A. K. Christie; (2) *Narendra Nath Raye, Esq.*, Principal, Bhagalpur College, Bhagalpur, proposed by Mahamahopadhyaya Haraprasad Shastri, seconded by Babu Panchanon Mukhopadhyaya; (3) *Professor P. C. Mahalanobis*, Indian Educational Service, 210. Cornwallis Street. Calcutta, proposed by Dr. N. Annandale, seconded by Major R. B. Seymour Sewell; (4) *Jagadindranath Lahiri*, Esq., M.Sc., Chemist to the Bengal Chemical and Pharmaceutical Works, Ld., Calcutta,

proposed by Dr. B. L. Chaudhuri, seconded by Dr. R. L. Datta; (5) *B. Sundara Raj*, Esq., Assistant to the Director of Fisheries, Madras Fisheries Bureau, Cathedral P. O., Madras, proposed by Dr. N. Annandale, seconded by Dr. B. L. Chaudhuri; (6) *P. Bosworth Smith*, Esq., Mining Engineer, Oorgaum P. O., South India, proposed by Dr. H. H. Hayden, seconded by Dr. W. A. K. Christie; (7) *J. H. de Caynoth Ballardie, Esq.*, City Architect, Calcutta, proposed by Dr. W. A. K. Christie, seconded by Mahamahopadhyaya Haraprasad Shastri; (8) *Capt. P. Ganguli, I.M.S.*, 11/1 Ghose's Lane, Calcutta, proposed by Dr. Upendranath Brahmachari, seconded by the Hon'ble Justice Sir Ashutosh Mookerjee, Kt., and (9) *S. A. Khuda Baksh*, Esq., M.A., B.C.L., Calcutta, proposed by Mr. A. H. Harley, seconded by the Hon'ble Justice Sir Ashutosh Mookerjee, Kt.

The following papers were read :—

1. *The Automatic Control of the Separation of a Liquid into Fractions limited by Specified Densities.—By* H. B. Dunnicliff.

2. *A Discussion on the Value of Bodily Measurements in Distinguishing Human Races.—By* N. Annandale.

3. *The Tigari—a primitive type of boat used in Eastern Bengal.—By* B. Prashad.

4. *Further Notes on the Genus Camptoceras (Mollusca Pulmonata).—By* N. Annandale and B. Prashad.

All these papers have been published in the *Journal*.

APRIL, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 7th April, 1920, at 9-15 P.M.

Mahamahopadhyaya Haraprashad Shastri, C.I.E., M.A., F.A.S.B., President, in the chair.

The following members were present :—

Maulavi Abdul Wali, Dr. W. A. K. Christie, Mr. Hem Chandra Das-Gupta, Mr. Johan van Manen, Mr. Panchanan Mitra, and Dr. Beni Prashad.

The minutes of the last meeting were read and confirmed.

Seventy-six presentations of books, etc., were announced.

The General Secretary reported the death of Lieut.-Col. John Manners-Smith, C.V.O. and Mr. Tukaram Krishna Laddu, ordinary members of the Society.

The following gentlemen were balloted for and elected as ordinary members :—

Kumar Krishna Dutta, B.L. Esq. Attorney-at-Law and Zemindar, 10, Hastings Street, Calcutta, proposed by Dr. B. L. Chaudhuri, seconded by Mahamahopadhyaya Haraprasad Shastri, C.I.E.; *Hariprasad Pradhan, Esq., M.A.*, Pradhan's Cottage, Darjeeling, proposed by Mr. J. van Manen, seconded by Dr. W. A. K. Christie.

The following papers were read :—

(*a*) *The Results of a recent Tour in Search of Pre-historic Antiquities.—By* Panchanan Mitra

This paper will not be published in the *Journal*.

(*b*) *The word "Taghār explained."—By* Maulvi Abdul Wali.

This paper has been published in the *Journal*.

MAY, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 5th May, 1920, at 9-15 P.M.

Mahamahopadhyaya Haraprashad Shastri, C.I.E., M.A., F.A.S.B., President, in the chair.

The following members were present :—

Maulvi Abdul Wali, Dr. N. Annandale, Dr. B. L. Chaudhuri, Dr. W. A. K. Christie, Dr. L. L. Fermor, Mr. Ganapati Sircar, Mr. T. P. Ghosh, Mr. H. G. Graves, Mr. Hem Chunder Das-Gupta, Mr. Johan van Manen, Dr. H. W. B. Moreno, Major R. B. S. Sewell, and Mr. E. Vredenburg.

Visitor.—Babu Nritya Gopal Sarkar.

The minutes of the last meeting were read and confirmed.

Nineteen presentations of books, etc., were announced.

The General Secretary reported the death of Mahamahopadhyaya Dr. Satis Chandra Vidyabhusana, an ordinary member of the Society.

The President announced that the Council at its last meeting passed the following Resolution :—

"The Council of the Asiatic Society of Bengal records its deep sorrow at the death of Mahamahopadhyaya Dr. Satis Chandra Vidyabhusana and its sense of loss not only to the

Council and to the Society which he has ungrudgingly served for 13 years, but also to Oriental learning generally. It offers to his widow its sincere condolence on her bereavement."

The General Secretary reported that Mr. J. MacKenna, I.C.S., Lieut.-Col. B. H. Deare, I.M.S., ordinary members, had expressed a desire to withdraw from the Society.

The President announced that in accordance with Rule 41, the Council had decided to propose to the Society the removal from the member list of the name of Dr. A. Führer, an associate member of the Society, this proposition to be submitted to ballot at the next meeting of the Society.

The President announced that the following four members being largely in arrears with their subscriptions have been declared defaulters and that their names would be posted in accordance with Rule 38 :—

Babu Jamini Kanta Biswas of Cuttack,
Lama Kazi Dausamdup of Gangtok,
Babu Akhoy Kumar Maitra of Rajshahi,
Moulvi Abdul Majid of Lucknow.

The President announced that Mr. A. H. Harley had been appointed Honorary General Secretary in the place of Dr. W. A. K. Christie when he would go on leave, and that Mr. D. R. Bhandarkar had been appointed Joint Philological Secretary in the place of Mahamahopadhyaya Dr. Satis Chandra Vidyabhusana, deceased.

The Anthropological Secretary laid on the table a letter and report from the École d'Anthropologie, Paris, on the proposed organization of an International Institute of Anthropology.

The proposal of the Council for the erection of a new building for the Society of which intimation had been given by letter to all Resident members in accordance with Rule 64A was brought up for discussion.

The following gentlemen were balloted for and elected as ordinary members :—

(1) *Major E. S. Harcourt*, M.C., Offg. Secretary. Board of Examiners, proposed by the Hon. Dr. A. Suhrawardy, seconded by Aga Muhammad Kazim Shirazi ; (2) *S. N. Ghose, Esq.*, B.Sc. (Glasgow), M. R. San. (Lond.) Asst. Sanitary Engineer, Bengal, 67, Dharamtola Street, Calcutta, proposed by Dr. B. L. Chaudhuri, seconded by Kumar Harit Krishna Deb.

Dr. Annandale on behalf of Mr. Sundar Lal Hora exhibited a collection of ethnographical specimens from Manipur.

The following papers were read :—

1. *Introduction to the Biology of an Island in the Chilka Lake (with lantern slides).*—*By* N. ANNANDALE.

This paper will be published in the *Memoirs*.

2. *On the supposed identity of Pygarhynchus, Agassis and Cyrtona McClelland.*—*By* HEM CHANDRA DAS-GUPTA.

This paper will be published in a subsequent number of the *Journal*.

JUNE, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 2nd June, 1920, at 9-15 P.M.

MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, C.I.E., M.A., F.A.S.B., President, in the chair.

The following members were present :—

Mr. D. R. Bhandarkar, Babu N. G. Majumdar, Dr. R, C. Majumdar, Mr. J. van Manen, Mr. Panchanan Mitra, Babu Sasadhar Roy, Major R. B Seymour Sewell, I M.S.

The minutes of the last meeting were read and confirmed.

Twenty presentations of books, etc., were announced.

The General Secretary reported the death of Maharaja Sir Girija Nath Ray, Bahadur, K.C.I.E., an ordinary member of the Society.

The President announced that Mr. W. R. Gourlay and Dr. Ramesh Chandra Majumdar had been appointed members of the Council.

The President called the attention of the meeting to the announcement made at the May General Meeting to the effect that the Council had decided on and proposed to the Society the removal from the member list of the name of Dr. A. Führer, an associate member of the Society. The proposition was submitted to ballot in accordance with Rule 41.

For—3.
Against—2.
Not carried.

The President announced that the following four members being largely in arrears with their subscriptions had been posted as defaulting members since the last meeting and that their names had been removed from the member list :—

Babu Jamini Kanta Biswas of Cuttack,
Lama Kazi Dausamdup of Gangtok,
Babu Akhoy Kumar Maitra of Rajshahi.
Moulavi Abdul Majid of Lucknow.

In accordance with Rule 48 (*d*) the General Secretary reported that the Council had sanctioned to the widow of the late Babu Nani Lal Manna, despatcher of the Society in consideration of his services to the Society since 1892, a gratuity of Rs. 210, representing six months' pay.

The following gentlemen were balloted for and elected as ordinary members :—

(1) *S. A. Skinner, Esq.*, Engineer and Director, Messrs. Jessop & Co., Ld., 93, Clive Street, Calcutta, proposed by Mr. W. K. Dods, seconded by Mahamahopadhyaya Haraprasad Shastri ; (2) *N. G. Majumdar, Esq.*, M.A., Student, Calcutta University, 70, Russa Road, Bhowanipur, Calcutta, proposed by Mr. D. R, Bhandarkar, seconded by Dr. Ramesh Chandra Majumdar.

Mahamahopadhyaya Haraprasad Shastri exhibited a Nepalese manuscript of the 12th century and read a note on it.

The following paper was read :—

1. *Historical data from the colophons of manuscripts.*—*By* Ramesh Chandra Majumdar, M.A., Ph.D.

This paper will be published in a subsquent number of the *Journal*.

JULY, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 7th July, 1920, at 9-15 P.M.

Mahamahopadhyaya Haraprasad Shastri, C.I.E., M.A., F.A.S.B., President, in the chair.

The following members were present :—

Maulvi Abdul Wali, Dr. N. Annandale, Dr. U. N. Brahmachari, Dr. J. J. Campos, Mr. Hem Chunder Das-Gupta, Mr. D. McLean, Mr. Johan van Manen, Dr. G. E. Pilgrim, Major R. B. S. Sewell, Mr. Vredenburg, Mr. A. H. Harley.

Visitor :—Dr. P. Cunha.

The minutes of the last meeting were read and confirmed.

Sixteen presentations of books, etc., were announced.

The General Secretary reported the death of Mr. E. J.

Woodhouse and Lieut.-Col. W. D. Sutherland, C.I.E., M.D., F.A.S.B., I.M.S., ordinary members of the Society.

The President announced that the Council at its last meeting passed the following Resolution :—

"The Council of the Asiatic Society of Bengal records its deep sorrow at the death of Lieut.-Col. William Dunbar Sutherland, C.I.E., M.D., F.A.S.B., I.M.S., and its sense of loss not only to the Council and to the Society of which he was a Vice-President but also to medical science generally. It offers to his widow its sincere condolence on her bereavement."

The General Secretary read an obituary notice of Lieut.-Col. Sutherland prepared by Major G. Berkeley-Hill, I.M.S.

William Dunbar Sutherland was born on the 13th September, 1866, at Lucknow. He was the son of Robert Sutherland, an officer in the Army Medical Service, a Scottish Highlander. How narrowly he survived his birth is evidenced by the fact that he was instantly christened by a Roman Catholic priest who happened to be near at hand and was hailed into the house by the distracted midwife, an Irish woman and a staunch daughter of the Church. Although occasionally prone to allude to this episode as his first and *last* connection with the Church of Rome, Sutherland always appeared to cherish a tender interest in Roman Catholicism, so that it is not improbable that this interest derived its emotional value for him from the circumstances in which he made his entry upon life! Of his early life Sutherland rarely spoke except to extol his beloved Alma Mater, the University of Edinburgh. Like so many medical students of his day, as well as many who came after him, Sutherland was greatly impressed with the lectures of the late Sir Henry Littlejohn. so that it may be assumed that his interest in that branch of medicine which was eventually to become the absorbing study of his life, as well as that which he was destined to advance and uplift in India, owes much of its origin and growth to the genius and personality of that great exponent of Medical Jurisprudence.

In addition to the lectures of Littlejohn at Edinburgh, Sutherland attended those of the famous French medico-legal jurist, Brouardel, in Paris, and. to quote his own words, "derived much profit from them." It was during this course of study in Paris that Sutherland laid the foundations of that knowledge of the French language of which he afterwards became so complete a master. He took his M.B. and C.M. in 1888, and shortly afterwards sat twice for the examination for a commission as Surgeon in the Royal Navy and each time failed to secure a vacancy by three places. As it was imperative for him to obtain a competency soon, for the "res angusta domi" was acutely felt by him, and as he was not attracted to the life of a country doctor, he went up for the examination

for commissions in the Indian Medical Service and secured the seventh place of seventeen that were vacant. In due course he went to Netley and there, as he always maintained, he learnt little else that was of any use to him besides "stretcher drill"! In the leaving examination at Netley he dropped four places, coming out eleventh. He was wont to attribute this disaster to having devoted too much of his time while at Netley to playing billiards, a game in which very few who knew him in later years can ever have seen him take a hand! This drop in his position on the list resulted in his having to take service in the Madras Presidency. On his arrival in Madras he was posted to the Station Hospital for British troops, and to quote his well-remembered words, "I soon learned that A.R., I., Vol. VI, was the Law and the Prophets." Although the son of an officer of the Army Medical Service, Sutherland throughout his whole career in the Indian Medical Service could never quite conceal his opinion that the sister service was immeasurably inferior to his own. Again it is not unlikely that as first impressions are usually the most potent in the matter of arousing feeling, his first contact with the Army Medical Service at the British Station Hospital in Madras, which was then heavily swathed in the reddest of red tape, was responsible for so much of the harmless fun he often permitted himself to poke at the service which is now the Royal Army Medical Corps. His great talent for languages enabled him to pass the examination in Hindustani in two months. He soon tired of Madras and prompted by a desire to see active service, he applied to be transferred to Burma and was given medical charge of the 19th Madras Infantry at Mandalay. He was subsequently detailed for duty with a column that was to operate in the Nwengal country in the Chin Hills. Sutherland spent an arduous and exciting time with the column, so that he was wont to express some regret at not receiving a medal. but in those days no medals or "batta" were given to those who took part in operations of this sort unless the Government of India called the expedition one on Field Service, so there was always as little talk in official circles about Field Service as possible—it was so thoroughly economical. He left the Chin Hills in August, 1892, and shortly after was transferred into civil employment in the Central Provinces where he remained on and off in various stations for nearly twenty years. He had long been impressed with the importance of discovering a reliable test for the origin of blood-stains, so that it was with great delight that he read of the serological tests for the origin of blood in stains, and he forthwith determined to study the subject and in 1906 went to England for this purpose. At that time Sir Thomas Stevenson was Home Office expert, but he was too senile to accept the new test, hence it was not being tried Consequently Sutherland had to go to Germany

where the test was being tried and elaborated by a host of workers. He first went to Hamburg to attend a course of lectures on Tropical Diseases at the Institute there. In Hamburg he met such authorities as Nocht, Fuelleborn and Giemsa, all of whom were only too pleased to make his visit to the Free and Hanseatic town a success. The Institute placed all its resources at his disposal. He started work on the agglutination-test for the origin of blood in stains and had photographs taken of his preparations. Had he been working in the London School of Tropical Medicine, which, as its advertisement sets forth, is under the auspices of Government, he would have had to pay so much for the use of microscopes, so much for every slide required by him, in addition to a fee for instruction of twelve guineas. At Hamburg he paid five pounds and got everything that he wanted! From Hamburg he returned to London and spent four months in study at the British Museum. He had made up his mind to write a book on blood-stains as there was not then a good up-to-date monograph on the subject in any of the usual European languages. He found the historical part of the study very arduous, but after finishing it he came to the beginning of modern medical jurisprudence in which he took the keenest delight. The long hours in the dusty atmosphere of the Reading Room led to his catching influenza which left him a legacy of inflammation of the accessory sinuses of the nose. This did not prevent him from finishing his study and on its completion he went to Frankfort-am-Main in the hope of getting a place in Ehrlich's Institute In this hope he was disappointed, but not to be deterred, he arranged with Professor Albrecht of the Senkenbergtanun, to work in his laboratory until a place was vacant in the laboratory of Professor Ehrlich. While at Frankfort-am-Main he placed himself under the treatment of Professor Spiess for his nasal affection and underwent in all seven operations. Eventually he got a place in Ehrlich's laboratory and carried out experiments with every reagent that had ever been recommended for the test for blood in stains, while at the same time watching the technique which had been elaborated by Sachs and Neisser for their test for the origin of the blood. After completing his studies in Ehrlich's laboratory he returned to London to write his book, the first few chapters of which had already been presented as his thesis for the degree of M.D. of Edinburgh University and had been "commended" by the Faculty. The book appeared in September, 1907, and was very well reviewed. By those whose speciality in medical jurisprudence gave them a right to pronounce an opinion upon it, the book was regarded as a work of singular merit.

In November, 1907, he returned to India and went back to Saugor where he stayed till September, 1908, when he was asked whether he would go to Calcutta to find out the possibi-

lity or otherwise of utilising the bio-chemical tests for the origin of blood-stains in medicolegal work in India. He came to Calcutta and worked here for a year reporting at the end of that time that the tests could be carried out there at all seasons of the year. In 1911 he went again to Europe on three months' leave and visited Vienna where he made the acquintance of Professor Sigmund Freud and of Dr. Friedrich S. Krauss, the editor of "Anthropophyteia." In 1912 Sutherland was for a short time Civil Surgeon at Jubbulpore and then he left to take up the post in Calcutta created for him by the Government of India, in which he remained continuously, except for a short visit to England in 1918, until his death. Of his work as Imperial Serologist to the Government of India many will testify that it was of the highest value, not only to medical jurisprudence in this country but to Serology as a science. Among the various tokens of recognition that he received, his election to a fellowship of the Asiatic Society of Bengal in 1917, followed by his appointment to the post of Vice-President in 1919, brought him perhaps the most satisfaction, more possibly, than the bestowal upon him of the Companionship of the Indian Empire by which the Government of India was pleased to signify its appreciation of his great services to medical jurisprudence in India. Later still he experienced the keenest pleasure in exercising his literary abilities in the editorial chair of the Indian Medical Gazette.

He was a remarkable linguist and spoke and wrote admirably both French and German. He could make an excellent impromptu speech in high-class Urdu, and of Burmese, Italian and Spanish he knew not a little. His knowledge of the classical languages was limited to Latin which he would often quote with meticulous accuracy and singular relevance. Of his own language he was a complete master. He spoke and wrote English with a precision and delicacy that few men attain to even after years of study. On a great variety of subjects he was a mine of accurate information, yet he rarely indulged in what may be termed "intellectual exhibitionism" as so many persons gifted with a very retentive memory are so apt to do. Many of his more intimate friends must have discovered that after years of association with him they were always liable to strike a new and utterly unexpected vein in his mine of knowledge. His appreciation of his friends, especially his professional friends, was always wholehearted and utterly without any sort of reservation. He was absolutely incapable of jealousy as well as of any feeling of hostility towards the rising generation which is such a direful characteristic in many men who have passed their intellectual climacteric.

Although he took a great delight in the society of women, he was essentially a man's man, and as a host he had few equals. Few men manage to get through their lives without

at some time or another permitting their personal sorrows and anxieties to obtrude themselves into the lives of others, and in this respect Sutherland was a notable exception. Whatever might have been troubling him, he always appeared bright and cheery in public, so that those who only knew him slightly may have sometimes been led to envy him for a man to whom trouble never came. It was on such men as W. D. Sutherland that the thoughts of Metatasio dwelt when he wrote :

" Se a ciascun, l'interno affano
" Si leggesse in fronto scritto
" Quanti mai che invidia fanno
" Ci farebbero pietà.....

The proposal of the Council for the erection of a new building for the Society of which intimation had already been given by circular to all members was brought up for final disposal.

The votes of the members were laid on the table and the President requested any member who had not expressed his opinion to take the present opportunity of filling in voting papers.

The President appointed Mr. J. van Manen and Mr. E. Vredenburg to be scrutineers.

The scrutineers reported as follow :—

For——86
Against——1
Carried.

The President announced that in accordance with Rule 41 the Council had decided to propose to the Society the removal from the member list of the name of Rajvaid Sri Bamandasji Kaviraj, an ordinary member of the Society. The proposition would be submitted to ballot at the next meeting of the Society.

The President announced that at a meeting of the Fellows of the Society held on Monday, the 28th June, 1920, the question of the alteration of certain dates in the regulations for election of Fellows were brought up for consideration, and it was resolved as follows :—

(1) The suggestion of Dr. Annandale to change 1st October into 1st August be accepted.

(2) The Secretary's suggestions that 1st November should be altered to 1st October in Rule 2, and in Rule 3 for " the end of November " should be substituted " 15th November." In rule 5 the following should be added after the word " fellow " : " so as to reach the Society by 31st December."

The Council had approved of the alterations.

The President announced that Dr. N. Annandale had been appointed Vice-President in the place of Lieut.-Col. W. D.

Sutherland, deceased; that Mr W. W. K. Page had been appointed Treasurer and that the Hon. Sir R. N. Mukherjee, K.C.I.E. and Dr. G. C. Pilgrim had been appointed members of Council.

Announcement by the President of the presentation by Mr. T. P. Ghose of an enlargement of a photograph of an old ruined Temple called Dumrail in the sub-division of Satkhiria, Khulna district.

Appointment on probation of Babu Probodh Chandra Deb as despatcher in place of Babu Nani Lal Manna, deceased.

The following gentlemen were balloted for and elected as ordinary members :—

(1) *Majar C. A. Gourlay*. D.S.C., M.A., M.D., I.M.S., Superintendent, Campbell Medical School, Medical Officers' Quarters, Presidency General Hospital, Calcutta, proposed by Dr. Upendranath Brahmachari, seconded by Major R. B. S. Seymour Sewell, I.M.S.; (2) *Major R. Knowles*, I.M.S., Secretary to the School of Tropical Medicine, No. 51, Chowringhee, Calcutta, proposed by Major R. B. Seymour Sewell, I.M.S., seconded by Mahamahopadhyaya Haraprasad Shastri; (3) *Hem Chandra Ray Chaudhury*, Esq., University Lecturer in the Department of Ancient Indian History and Culture, Calcutta University, No. 43 3, Amherst Street, proposed by Mr. D. R. Bhandarkar seconded by Dr. Ramesh Chandra Majumdar; (4) *Sites Chandra Kar*, Esq., M.A., University Lecturer, University College of Science, 93, Upper Circular Road, Calcutta, proposed by the Hon. Justice Sir Asutosh Mukhopadhyaya, Kt., seconded by Dr. Ramesh Chandra Majumdar.

The following papers were read :—

1. *Zoological Results of a tour in the Far East. Mysidacea, Tanaidacea and Isopoda* —*By* W. M. Tattersall, D.Sc. *Communicated by* Dr. Annandale.

2. *Note on the common Vivipara of Lake Biwa, Japan.*—*By* N. Annandale, D.Sc.

These papers will be published in the *Memoirs*.

3. *Preparation of Urea-Antimonyl-tartrate, a new compound.*—*By* U. N. Brahmachari, M.A., M.D., Ph.D., *and* Parimal Sen, M.Sc.

This paper will be published in a subsequent number of the *Journal*.

AUGUST, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 4th August, 1920, at 9-15 P.M.

Mahamahopadhyaya Haraprasad Shastri, C.I.E., M.A., F.A.S.B., President, in the chair.

The following members were present :—

Moulvi Abdul Wali, Dr. U. N. Brahmachari, Mr. T. P. Ghose, Mr. N. G. Majumdar, Dr. R. C. Majumdar, Mr. Johan van Manen, Mr. Panchanan Mitra, Major R. B. S. Sewell, Mr. A. H. Harley.

Visitor :—Babu Abinas Ch. Majumdar.

The minutes of the last meeting were read and confirmed.

Twenty-four presentations of books, etc., were announced.

The President announced that the following member being largely in arrears with his subscriptions had been declared defaulter and that his name would be posted in accordance with Rule 38

Joseph Orlando Ferrer, Esq., Calcutta

The President called the attention of the meeting to the announcement made at the July General Meeting to the effect that the Council had decided and proposed to the Society the removal from the membership list of the name of Rajvaid Sri Bamandasji Kaviraj, an ordinary member of the Society. The proposition was submitted to ballot in accordance with Rule 41.

For the proposal—9.
Against the proposal—2.
Carried.

The following gentlemen were balloted for as ordinary members :—

(1) *Harold Martin, Esq.*, Merchant, 6 Hastings Park Road, Alipore, proposed by Sir R. N. Mookerjee, K.C.I.E., seconded by Mr. W. K. Dods; (2) *Oswald Martin, Esq.*, Civil Engineer. *c/o* Messrs. Martin & Co., 6, Clive Street, Calcutta, proposed by Sir R. N. Mookerjee. K.C.I.E., seconded by Mr. W. K. Dods; (3) *K. N. Dikshit. Esq.*, Offg. Superintendent, Archæological Survey, 93, Russa Road. North, Calcutta, proposed by Mr. D. R. Bhandarkar, seconded by Dr. Ramesh Chandra Majumdar; (4) *Satyendra Nath Sarkar, Esq.*, Merchant, 9 3, Clive Street, proposed by Mahamahopadhyaya Haraprasad Shastri, seconded by Mr. A. H. Harley; (5) *N. Padmanabha Panikker, Esq.*, B.A., F.L.S., Inspector of Fisheries, Travancore, proposed by Dr. Bani Prashad, seconded by Dr. N. Annandale.

The following papers were read :—

1. *Notes on some Edicts of Asoka.*—*By* Harit Krishna Deb.

2. *Cinna Stone Inscription of the reign of Yajnasrī Sātakarni.*—*By* N. G. Majumdar.

3. *Prehistoric Writing in India and Europe.*—*By* Panchanan Mitra.

All these papers will be published in a subsequent number of the *Journal*.

SEPTEMBER, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 1st September, 1920, at 9-15 P M.

Mahamahopadhyaya Haraprasad Shastri, C.I.E., M.A., F.A.S.B., President, in the chair.

The following members were present:—

Maulvie AbdulWali, Mr. D. R. Bhandarkar, Dr. B. L. Chaudhuri, Mr. Harit Krishna Deb, Mr. T. P. Ghose, Mr. W. R. Gourlay, Mr. A. H. Harley, Major R. Knowles, Dr. R. C. Majumdar, Mr. Johan van Manen, Hon. Mr. F. J. Monahan, Mr. H. C. Roy-Chaudhuri, Mr. S. C. Sinha-Sharma.

The minutes of the last meeting were read and confirmed.

Twenty-two presentations of books, etc., were announced.

The General Secretary reported that Lieut.-Col. A. R. S. Anderson, I.M.S., Major O. St. John Moses, I.M.S., and Dr. W. W. Kennedy, ordinary members, had expressed a desire to withdraw from the Society.

The President announced that the name of the following member being largely in arrears with his subscriptions had been posted as a defaulting member since the last meeting and that his name had now been removed from the member list.

Joseph Orlando Ferrer, Esq., Calcutta ..

The following gentlemen were balloted for and elected ordinary members:—

(1) *Haran Chandra Chakladar, Esq.*, University Lecturer, 25, Sahanagar Road, Kalighat, Calcutta, proposed by Mr. Ordhendra Coomar Gangoly, seconded by Dr. R. C. Majumdar; (2) *Capt. F. J. Brandon*, Indian Army, 52nd Sikhs, F. F. Jullundur, proposed by Major E. S. Harcourt, seconded by Mr. A. H. Harley; (3) *Ramaprasad Chanda, Esq.*, University Lecturer, 37 (A), Police Hospital Road, Calcutta, proposed by Mr. D. R. Bhandarkar, seconded by Dr. R. C. Majumdar; (4) *Nirmal Chandra Chatterjee, Esq.*, Lecturer in History and Politics, Calcutta University, 52, Haris Mukerjee Road, Bhowa-

nipur, Calcutta, proposed by the Hon. Dr. A. Suhrawardy. seconded by Dr. R. C. Majumdar.

The following papers were read :—

1. *Note on Persistent Oviducts and Abnormal Testes in a male* RANA TIGRINA.—*By* D. R. BHATTACHARYA.

2. *The Later Mauryas and the Decline of their Power.*—*By* HEMCHANDRA RAY-CHAUDHURI.

3. *The Gupta Empire in the Sixth and Seventh Centuries A.D.*—*By* HEMCHANDRA ROY-CHAUDHURI.

4. *The Svastika and the Oṁkāra.*—*By* HARIT KRISHNA DEB.

All these papers will be published in a subsequent number of the *Journal*.

OCTOBER, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 6th October, 1920, at 9-15 P.M.

MAJOR R. KNOWLES, I.M.S., in the chair.

The following members were present :—

Mr. Johan van Manen, Mr. Panchanan Mitra, Dr. Beni Prashad, Prof. Sites Chandra Kar, Mahamahopadhyaya Hara Prasad Shastri, Mr. A. H. Harley.

Visitors :—Mr. S. L. Hora, Mr. Wm. Eppler.

The minutes of the last meeting were read and confirmed.

Ninety-four presentations of books, etc., were announced.

The following papers were read :—

1 *Meine Lösung des Fermatschen Problems.*—*By* DR. JOHN RADAKOVITS. Communicated by the Physical Science Secretary.

This paper will not be published in the Journal.

2. *Timur's Apocryphal Memoirs.*—*By* H. BEVERIDGE.

3. *Preliminary observations on Cocoon-formation by the common Lahore Leech, Limnatis (Poecilobdella) Granulosa (Sav.)* —*By* GEORGE MATTHAI.

4. *On the Licchavis in Ancient India.*—*By* BIMALA CHARAN LAW.

All these papers will be published in a subsequent number of the *Journal*.

The Adjourned Meeting of the Medical Section of the Society was held at the Society's Rooms on Wednesday, the 13th October, 1920, at 9-15 P.M.

MAHAMAHOPADHYA HARAPRASAD SHASTRI, M.A., C.I.E., F.A.S.B., President, in the chair.

The following members were present :—

Dr. U. N. Brahamachari, Dr. J. J. Campos, Major R. Knowles, Dr. H. Suhrawardy.

Visitors :—Dr. P. de Cunha, Dr. P. E. Lee, Dr. W. O. Walker.

The minutes of the meeting held on 12th March, 1919, were read and confirmed.

The following papers were read :—

1. *Louis Pasteur*, 1822 *to* 1895.—*By* MAJOR R. KNOWLES, B.A., M.R.C.S., L.R.C.P., I.M.S.

2. *A preliminary note on the minimum curative doses of quinine in the treatment of malarial fever by the intravenous method.*—*By* Dr. U. N. BRAHAMACHARI, M.A., M.D.

3. *Some observations on blood pressure during intravenous injections of quinine in the treatment of malarial fever.*—*By* DR. U. N. BRAHMACHARI.

NOVEMBER, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 3rd November, 1920, at 9-15 P.M.

MAHAMAHOPADHYAYA HARA PRASAD SHASTRI, M.A., C.I.E., F.A.S.B., President, in the chair.

The following members were present :—

Dr. N. Annandale, Dr. B. L. Chaudhuri, Mr. Harit Krishna Deb, Mr. K. N. Dikshit, Dr. L. L. Fermor, Mr. Ganapati Sirkar, Major R. Knowles, Mr. F. A. Larmour, Prof. P. C. Mahalanobis, Dr. R. C. Majumdar, Mr. Johan van Manen, Hon. Mr. F. J. Monahan, Dr. Beni Prashad, Mr. E. Vredenburg, Mr. N. C. Chatterjee, Mr. A. H. Harley.

Visitors :—Babu Nritya Gopal Sarkar and another.

The minutes of the last meeting were read and confirmed

Twenty-five presentations of books, etc., were announced.

The General Secretary reported that Mr. H. St J. B. Philby, I.C.S., and Mr. David McLean, ordinary members, had expressed a desire to withdraw from the Society.

The following papers were read:—

1. *The Stature of the Anglo-Indian Male.—By* P. C. MAHALANOBIS.

This paper will not be published in the Journal.

2. *Some of the Agaricaceae of Bengal.—By* S. R. BOSE. *Communicated by* DR. H. C. CARTER.

3. *On an inscription dated the 11th year of Vira Narasimha Deva of Orissa obtained from Bhuvanesvara.—By* GANAPATI SIRKAR.

4. *The Chronology of the Sena Kings.—By* R. C MAJUMDAR.

5. *The Chronology of the Pala Kings.—By* R. C. MAJUMDAR.

All these papers will be published in a subsequent number of the *Journal*.

The Adjourned Meeting of the Medical Section of the Society was held at the Society's Rooms on Wednesday, the 10th November, 1920, at 9-30 P.M.

DR. U. N. BRAHMACHARI, M.D., M.A., PH.D., in the chair.

The following members were present:—

Dr. J. J. Campos, Major R. Knowles, Mahamahopadyaya Haraprasad Shastri, C.I.E.

Visitors:—Dr. P de Cunha, Mr. S. Ghosh, Major R. Lloyd, Mr. J. A. Scrimgeour and others.

The minutes of the meeting held on 13th October, 1920, were read and confirmed.

Major R. Knowles, I.M.S., read a paper on "The Mechanism and Treatment of Snake-Bite," illustrated by Lantern Slides.

DECEMBER, 1920.

The Monthly General Meeting of the Society was held on Wednesday, the 1st December, 1920, at 9-15 P.M.

MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, M.A., C.I.E., F.A.S.B., President, in the chair.

The following members were present :—
Mr. D. R. Bhandarkar, Mr. K. N. Dikshit, Mr. F. Doxey, Major R. Knowles, Mr. N. G. Majumdar, Mr. Johan van Manen, Mr. Panchanan, Mitra, Mr. Nirmal Chandra Chatterjee, Kumar Sarat Kumar Roy, Hon. Mr. F. J. Monahan, Prof. Ramaprasad Chanda, Mr. A. H. Harley.

Visitor :—Mr. S. P. Agharkar.

The minutes of the last meeting were read and confirmed.

Twenty-one presentations of books, etc., were announced.

The President announced that Dr. S. W. Kemp had been appointed Biological Secretary and until next election to carry on the duties of Anthropological Secretary in the place of Dr. N. Annandale.

The following gentlemen were proposed as associate members :—

Mahamahopadhyaya Pandit Vindhyesvari Prasad Dube, Gobardhan Serai, Benares City, and Professor Shahay Ram Bose, Carmichael College, Calcutta.

MAHAMAHOPADHYAYA PANDIT VINDHYESVARI PRASAD DUBE.

He is a retired Librarian of the Benares Sanskrit College and is a remarkable man. He does not know English, yet his knowledge of the chronology of Sanskrit Literature is quite of a European standard. It is both accurate and systematic. He knows more about Sanskrit manuscripts than any man living. He is a great help to any scholar desirous of editing Sanskrit works. Many of the Sanskrit libraries in Europe and India have got manuscripts through him.

Command of manuscripts has made him an excellent editor and he has edited for various Sanskrit series, such as the Bibliotheca Indica, the Chowkhamba Sanskrit Series, the Benares Sanskrit Series, and so on. Though his command of Sanskrit manuscripts covers the whole field of that literature, yet he prefers works on Nyaya and his prefaces to these are always helpful in determining their age and position in literature. His preface to the Nyaya-Varttika is a valuable history of the development of the Nyaya system, both ancient and modern.

PROFESSOR SHAHAY RAM BOSE.

Papers already published.

(1) Fungi of Bengal (Agaricaceae and Polyporaceae), Proceedings of Indian Association for Cultivation of Science, Vol. IV, Part IV, p, 109.

(2) Artificial culture of spore of Panæolus cyanescens. Abstracts of papers. Section of Botany. 7th Indian Science Congress (Nagpur, 1920), p. XXVII.
(3) Polyporaceae of Bengal. Bulletin No. I of the Carmichael Medical College, Belgachia, Calcutta.

The following gentlemen were balloted for and elected as ordinary members :—

(1) *Bt. Lieut.-Col. F. P. Connor, I.M.S.*, Professor of Clinical and Operative Surgery, Medical College Hospital, 2, Upper Wood Street, Calcutta, proposed by Major R. Knowles, I.M.S., seconded by Mr. A. H. Harley; (2) *Major Mohamed Akbar Hoti*, 1st Brahmans, Chief of Hoti, N.W.F.P., proposed by Dr. B. Prashad, seconded by Dr. N. Annandale; (3) *B. C. Mazumdar, Esq.*, Lecturer, Calcutta University, 33/1/C, Lansdowne Road, Calcutta, proposed by Mr. D. R. Bhandarkar, seconded by Dr. Ramesh Chandra Majumdar; (4), *W. Ivanow, Esq.*, Late Librarian of the Asiatic Museum of the Russian Academy of Sciences, 12, Waterloo Street, Calcutta, proposed by Mr. A. H. Harley, seconded by Mahamahopadhyaya Haraprasad Shastri.

The following paper was read :—

Manibhadra.—By Ramaprasad Chanda.

This paper will be published in a subsequent number of the *Journal*.

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The adjourned meeting of the Medical Section of the Society was held at the Society's Rooms on Wednesday, the 8th December, 1920, at 9-15 P.M.

Major R. Knowles, I.M.S., in the chair.

The following member was present :—

Dr. U. N. Brahmachari.

Visitors :—Major F. P. Mackie, I.M.S., Dr. L. E. Napier, Dr. Tarak Nath Sur, Mr. H. Le Viense.

The minutes of the meeting held on 10th November, 1920, were read and confirmed.

The following papers were read :—

On some Antimonial compounds and their use in the treatment of Kala-azar, with a preliminary note on the toxicity of certain antimonial compounds.—By Dr. U. N. Brahmachari.

On the resistance of newly formed *red blood corpuscles to hæmolysis under the influence of distilled water.—By* Dr. U. N. Brahmachari.

14. Further notes on Gypsies in Persia.

By W. Ivanow.[1]

Information regarding gypsies in Persia and their language so far is still very deficient; therefore my few occasional notes on these matters, made on the spot, may be of some use to those who make this tribe an object of their special study. My notes consist of two vocabularies collected in Nishapur (1918) and Sabzawar (1919), and several remarks on gypsy life in these two districts as well as the district of Meshed which I had a chance to explore thoroughly (1919-20).[2] It will suffice to give here a summary account only because the conditions of gypsy life are the same throughout North-Eastern Persia, and their language in the two eastern districts mentioned here is practically the same. In Meshed district nearly all representatives of this tribe I met with came from southern districts, such as Gunabad, Qain and Birjand.[3] In connection with these I already published some materials in my paper "On the language of the Gypsies of Qainat" (J.A.S.B., Vol. X, Nos. 10 and 11, 1914, pp. 439-455).[4] The grammatical outlines given there hold good, with small modifications, for the Nishapur and Sabzawar gypsy. Unfortunately this paper was published after I left India, and the war cut my communications with this country. Therefore it swarms with misprints and also requires some amendments, which I take the opportunity of offering here.

I.

In Northern Persia, as probably all over the country, gypsies are taking a conspicuous part in the economics of village-life. The Persian peasant, who by no means can be

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[1] I am much obliged to Col. G. Ranking, I.M.S., for his kind emendations in my English, as well as for several suggestions regarding the etymology of several gypsy words.

[2] My materials on gypsies in Bukhara and Shiraz are not available to me at present.

[3] I am not quite sure if there are any gypsy families whose migrations are confined to Meshed district only. It seems very unlikely as gypsies are very scarce there.

[4] I regret now the amateurish spirit displayed by me in that paper written some 7 years ago in the part dealing with hints on the history of gypsy migrations. For them I received a well-deserved reprimand from the late Prof. C. Salemann (of the Russian Academy of Sciences). The parts however dealing with the present conditions of life and language of gypsies are still reliable as I had the chance to find on my second visit to the Province of Birjand quite recently.

called very energetic and enterprising, is quite helpless in all sorts of craftmanship. He comes to cities to buy the most necessary tools, and when they are broken or out of order he walks again many miles to have them repaired in the bazars of the same town. On this peculiar defect of Persian villagers depends the whole welfare of gypsies. They appear with their black tents in the remotest villages, and at very cheap rates shoe donkeys, sharpen knives, repair shovels, chains, and reaping hooks, make weaving implements, combs, wooden pipes for "qalyān," etc. Their women make sieves, so important in the domestic life of a Persian peasant, and fashion quite a number of small but necessary things. Gypsy work is always honest and reliable, and, having regard to the primitive instruments they use, it occasionally shows remarkable skill and finish.

Living in great poverty and even at the best of times "from hand to mouth", they depend entirely on the demand for their labour, and occasionally on facilities for grazing the few donkeys or sheep they possess. These considerations govern all their migrations, the choice of locality, and sometimes long wanderings to distant corners of Persia. They appear wherever there is work for them, never in large numbers, one family or two, and it is very complimentary to their spirit of peacefulness that quarrels for staying in certain localities are extremely rare amongst them. In winter and spring, their hardest time, they come to more inhabited places and towns. where they work for merchants, usually making wooden parts of pipes, combs, etc.

It is noteworthy that in Eastern Persia the classical gypsy-professions appear to be non-existent, i.e. horse-dealing, fortune-telling, and singing. The first is impossible on account of their poverty and from the fact that there are very few horses in a Persian village. The second is out of the question, because there are always swarms of Mullas, Dervishes. and professional fortune-tellers, who perform their work with deep knowledge and scholarship, with the whole apparatus of Arabic books, quotations from the Qurān, etc., etc., about which the poor and ignorant gypsy woman never can dream.

The art of music is occasionally practised by young boys. but the demand for music is very small in such a poor country as Persia. In the cities there are two very powerful competitors, the reciters of the stories about Shi'a martyrs (so-called rūza-khwān) and that most unpleasant gift of civilization—the gramophone.

In Nishapur and Sabzawar an interesting old custom is observed. Gypsies have their own quarter (*maḥalla*) in the central parts at the bazars of these two cities.[1] Some of them

[1] I have not seen this in other Persian towns I visited.

reside there permanently, and the others come occasionally, chiefly to spend the winter. I failed to find out from the local inhabitants how old this custom is. Usually gypsies are not regarded as good neighbours, and in Bukhāra the ancient restriction upon this tribe prohibits them remaining or entering inside city-walls after sunset.[1]

In Nishapur and Sabzawar they are in fact recognised as one of the trade-corporations of the bazar, and if they do not enjoy complete equality of rights with other craftsmen, the cause may be only their great poverty and illiteracy. They have no shops, and work in their houses or simply in the streets, sitting on the ground. They have usually a headman, sometimes hereditary, who is as primitive and illiterate as his tribesmen. Therefore he can hardly protect them sufficiently against extortion and all sorts of injustice, etc., on the part of the corrupt Persian officials.

In my previous paper I dealt to some extent with the family life of gypsies. At present I have nothing to add, and I will mention only the point which seems to be essential. The more I saw of gypsies the more I was impressed by the low state of their mentality, which is probably on a par with that of savage peoples. It is especially remarkable when they are met with amongst Persians who, in spite of all their defects, are a very clever race. Gypsies are far superior to them in morality, but appear quite incapable of any progress; they are not even fit to endure any increase in the hardships of life. Persians feel towards them something like race-prejudice, and keep them quite isolated from their intimate life. Cases of the engagement of a gypsy as a servant are very rare, and I know only one instance where a boy of this tribe was employed as a muleteer by a Persian.

It may be added that the recent great famine in Persia (1916-17) reduced the number of gypsies very considerably, as well as of other nomadic tribes who after having lost nearly all their flocks were starving and afterwards fell a prey to typhus and other epidemic diseases.

II.

If asked, gypsies will invariably maintain that their language is absolutely the same all over Persia, Afghanistan and other countries of the East. This statement is very doubtful however. In reality, as far as I could see in Persia and

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[1] Occasionally gypsies are called in Bukhara by the name of *Mughāt*, which Bukharians explain as derived from *Mugh* which means a Magūs, a fire-worshipper. Being unbelievers they could not settle inside this holy city. All this is as doubtful as the etymology of this name. Hindus are greater unbelievers than fire-worshippers in Mohammadan opinion, but notwithstanding this they stay in the city in large numbers.

Bukhara, what is called 'gypsy' language is merely a jargon, a gypsified form of local idiom. It is always synthetic and can be dismembered into several parts as follows:—

a. A number of words of distinctly Indian origin, which may or may not be the remnants of the original gypsy language, on the assumption that it was of Indian stock.

b. The chief bulk of the jargon is based on the grammar and vocabulary of the language spoken by the people amongst whom they live, Persian, Turkish, Kurdish, etc., as the case may be. It is usually taken in its most vulgar form, and more or less gypsified. For this reason its original grammar and phonetic rules are curtailed, and separate words rearranged in different ways, e.g. intercalations of new sounds or syllables, syncope, reversion of sonant or consonant groups, etc., occur. And lastly, special suffixes are added such as *ok*, *nok*, *chok*, *tok*, *i*. *chi*, *che*, *huz*, *dew*, *ugo*, *kom*, *kim*, *tom*, *tum*, *ley*, *qis*, *ghis*, etc. With few exceptions they are used indifferently, and I think their real signification is forgotten. They are the chief means of producing various generic names of which gypsies are very fond (these will be discussed later on). It seems quite likely that more stable combinations can undergo a secondary gypsification in one of these ways, and it may be the case with a considerable number of words which do not bear any etymological analysis.

c. The words of spurious origin just mentioned above.

d. Stray words picked up from different languages.

e. Words of artificial, conventional origin mostly borrowed from Persian or Arabic. It is impossible to state now with any degree of certainty whether the gypsies took them from the secret code of dervishes, beggars and thieves, or the last-mentioned worthies were benefited from the lexical treasure of that tribe. Anyhow there are many similar conventional codes in use of several trade-corporations, and the best known of them are *Zargari* used by goldsmiths, and *Yezdi* which serves the same purpose for cloth-merchants. Such are words like *terigho*, unmistakably the Arabic *ṭarīq*; *talkhaki*, from the Persian *talkh*, bitter, etc.

For examples of all these classes I may refer the reader to the vocabulary published here, where every word is marked by the above letters *a*, *b*, *c*, *d*, *e*.

From the point of linguistic psychology these gypsy jargons can be very quaint occasionally. The tribe is by no means backward in acquiring the languages of the people they meet in every day-life. Gypsies in this part of Persia are quite at ease with Persian, Turkish and Kurdish, the chief languages used here. They speak quite correctly and, as appears to a stranger, far better than they speak their own language, which, as I have pointed out in my previous paper, they reserve exclusively for occasions when they want not to be under-

stood by any body except themselves, mainly therefore in business transactions. In a conversation of this kind the object of discussion is quite well known to both sides, and only a few allusions are sufficient to settle the details. This is probably why they are fond of generalising names which convey often a large number of ideas joined under a secondary unessential "differentia specifica" as e.g. *shākhki*, undoubtedly from the Persian *shākh*, a branch of a tree. It means every thing of wood, such as door, box, stick, etc. *Turushnók* from the Persian *turush*, sour, is everything sour—pomegranates, sour milk. vinegar, etc. For me it is difficult to realise the reasons which lead them to prefer these shapeless expressions and forget the old words. At the same time their thought is very concrete, and they do not like any abstract names. Such primitive abstractions as "price, value" they invariably render by "money," etc.

No less peculiar are the phonetic rules which govern the adopted vocabulary. In pronunciation there is always something by which a gypsy can be easily recognised. But it is not for me, nor is it possible in the present state of the knowledge of Oriental gypsies, to sketch the outlines of their innate phonetic predispositions. Therefore I will adduce here some examples without attempting to explain them.

1. After a final i or, more rarely, other vowels, there is always a slight sound variably approximating that of a quite clear *r* and *l*, e.g. *agi* sounds often *agir*, *agil*; *cheti—cheti* (*r-l*); *masi* (*r-l*); rarely *goró* (*r*), etc. It is *not* the Persian suffix of the objective case *rā*, and this phonetic rule has no parallel in local Persian, Turkish and Kurdish.

2. *n* is often very guttural, similar to *ng* but used quite differently from those occasionally observed in Turkish dialects and in Kurdish.

3. *l* whenever it occurs in the middle of a dissyllabic word comes in front, as in *lumbo* = *mullo*, *lōpūn* = *pōlūn*, *labund* = *buland*, *lawe* = *bale*, etc. It is difficult to decide in what degree this may be intentional.

4. Frequent use of aspirates something like the *spiritus asper* with the initial vowel, and after consonants as well, especially with labials (*bhot*, *bhutok*, *bhukar*, etc.). This is quite uncommon in local Persian.

In morphology nothing essential can be added to what was stated in my previous paper. The difference appears only when the grammar of local Persian slightly changes the rules common in Qaini. Verbs are the same in Nishapur and Sabzawar.

Alone calling for mention are the numerals, which in their syncopated form appear at first to be different from the Persian numerals. But they are in reality quite the same, and the apparent peculiarity is caused by the addition of a suffix

hōt [1] having the same signification as Persian *tā* used in popular language. So the numerals run as follows :—

1 *Yakōt*, 2 *dūyōt*, 3 *sōt* (*se* + *hōt*), 4 *chōrōt*, 5 *panōt*, 6 *shi-shōt*, 7 *hafōt*, 8 *hashōt*, 9 *nuōt*, 10 *da'ōt*, *etc.*

III.

In order to avoid any change of incorrect identification of gypsy words with the idioms in other languages, I will give here an etymological analysis only in the cases where no doubt can exist. It is necessary to remember that the present vocabulary is based on occasional notes, and there may still be many words which might vitiate these conclusions.

The abbreviations here are as follows :—

N. found in Nishapur district.
S. ,, ,, Sabzawar ,,
Q. ,, ,, Qain and Birjand districts, as in my previous paper (for reference only).
Ar. Arabic word.
P. Persian ,,
H. Hindustani or Hindi word.
a, *b*, *c*, *d*, *e*—classes as above, regarding the origin of words.

agi, ōgi, agir, N.S. (a) fire, lamp, hearth, light, etc., H. **āg.**

ājik, hōjik, S. (b) Tajik, so the Persians call themselves when opposed to Turks and Kurds.

(be)-aju, ajo,[2] N.S.Q. (c) verb. trans., to make, do.

aṅgil, N. (c or a) charcoal. (The same, as **agi** ?)

akūl, akol. N.S.Q. (c) a walnut. (May be from Hindustani **akhrot** through many changes **akhorot, akoro, akolo, akol** ?),

askōl, S. (b) charcoal. P. *zughāl*, changed into **azghōl, asqōl.**

ati, S.N. (a) flour. H. **āṭā.**

bagal, N (S.) (a) sheep, goat. H. **bakrā.**

barṅōgi, N.Q. (c) nose. (**bar** P. cheek and **nāk,** dial. P. nose = face ?).

bartewi, N.Q. (c) coat, a **qabā** in Persian.

bōbūn, N. (b) grandfather, P. **bābā,** the father.

bōhōṅg, N. (c) father.

bohōt, N.Q. (a) great, plenty, much, many, etc. H. **bahut.**

bokōr, N. (b) P. **bāzār, shop.**

bōtōk, bhōotōk, N.Q. (c) garden (from P. **bāgh** and Gypsy suff. **tōk** ?).

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[1] This ō is a phonetical reproduction of Persian ā in allthe dialects of Northern and Eastern Persia. It is equivalent to a in "all."

[2] All the verbs here are shown in the imperative mood, singular number.

(bu)-budan ?, N. (c) verb. trans., to cut. (Very doubtful.)

bukar, bhukar, S.Q. (c) man, servant (from P. **nūkar** ?).

chamori, chemuri, N.Q. (c) bird, fowl, cock, egg, etc.

changō, N. (c) hand, finger, nail, arm, etc. (from P. **chang** claw).

(be) **chubush,** N. (c) verb. trans., to tell, say, talk, etc. (very strange).

churā, S. **churzā,** N. (a ?) young, child, boy, son, etc. (may be from the same root as **choro** in Engl. gypsy).

dakh, N.S.Q. (c) good, well. handsome, pretty, tasty. strong, etc.

daram, dōram, S. (c) water-pipe (qalyān).

darika, dorika, dorikak, N.S. (c) daughter, girl, bride, etc.

dehoṅ, N. (c) wheat. (H. **gehūn** ?).

elchi, ilchi, alchi, archi, N. (Q.) (c) village.

genew, N. (c) thief, brigand.

gerā, girō, N.S.Q. (a) donkey, mule. H. **gadhā.**

gomō, gomoṅ, N.S. (c) money, silver.

gorō, N.S.Q. (a) horse, pony. H. **ghoṛā.**

goshōn, N. (c) eye, eyebrow, eyelid, etc.

guri, N.S.Q. (c) cow, bull, calf.

harsīt, harsīd, arsi, kharsit, N.S. (c) bread.

(be) **horōn,** N. (c) verb. trans., to sell (may be from P. **kharānīdan,** used very rarely, "to make one to buy." Gypsies are very fond of causative form).

jewī, jewīt, jewīd. N.S.Q. (c) woman, wife. N. mother.

jil, zil, S. (c) barley. (Probably corrupted form of the more common **zabul** *q.v.*)

(be)-**jil,** N.S. (a) verb. trans., to light up. burn. H. **jalnā.**

kalir, N.Q. (d or e) little, small. Ar. **qalīl.**

(be)-**kelōw,** N. (c) verb. trans., to draw, pull.

(be)-**keri,** N.Q. (b) verb. trans., to buy. P. **kharīdan.**

kharsīd, v. **harsīd.**

khatak, N.S.Q. (c) melon, cucumber, pumpkin, etc.

(be)-**khoy,** N. (a) verb. trans., to eat. (H. **khānā**).

khurduk, S. (e) wheat. Apparently from P. **khurd,** little.

khushpak, N.S.Q. (c or e) wood. stick, peg, firewood. etc. (from Ar. **khashab** wood ?).

(be)-**kimi,** N.S.Q (c) verb. intrans., to go.

(be) **kimōn,** N. (c) verb. trans., to take or carry away (causative of **kimi**).

kuri, kur, N.Q. (c) house, tent. roof, wall, etc. (fr. H. **ghar** ?)

kuski, N. (**b**) bowl, cup, basin. (P. **kāsak**, dim. for **kāsa** ?).

kutan, kudan, N. (a ?) where ? where to ?

labund, N. (**b**) high, tall. P. **buland.**

lamīr, N. (**b**) paste. P. **khamīr.**

lōpūn, N.G. (**b**) pack saddle: P. **pālān.**

lūha, S.Q. (**a**) iron. H. **lohā.**

makh, mah, N. **(c)** lost. (Cf. Q. verb **mahanj(idan)** in my previous paper).

masi, masi(r), masi(l) N.S.Q. **(a)** meat. Hindi **māṅs.**

mehrek, S.Q. (**c**) grapes.

mōdengi, N. (**b**) mare. P. **mādiān.**

monis, N.Q. (**c**) husband, man. (H. **manush**).

nif, N. (Q. **nuf.**) **(c)** sleep.

(be)-pak, N.Q. (**a**) verb. trans, to cook, roast, boil. H. **paknā.**

pāley, N. (**b**) leg, foot, ankle, etc. P. and H. **pā.**

partūn, N. (**c**) worn out, torn, old (fr. P. **pāra** ?).

pōguli, N. (Q.) (**c**) foot-wear, slippers.

punew, panew, punow, N.S.Q. (**a**) water. H. **pāṇī.**

punowi, N.S. (**a**) wet, fresh, bath, ablution, juicy.

pur, N.Q. (**c**) load.

push, N.Q. (**b**) blanket. P. **pushāk.**

raj, N.S. (**c**) bedding.

rasey, N. (**e** or **d**) head, face, cheek, neck, etc. (Ar. **ra's**).

razŭm, S. (**a ?**) rice. (? P. **ruzz**).

r iski, N.Q. (**a**) thread, cord, rope, etc. H. **rasī**, P. **rismān.**

rosia (?), S. (**c**) a sheet, cover. (? H. **razāī**).

semer, samar, S.Q. (**e** or **d**) hay, lucerne, grass. (Ar. **th**amar, fruit ?).

senufto, S.Q. (**c**) dog. (cf. Skt. **çvan** = dog).

serigho, S. (**c**) dry grapes.

setan, setun, S.Q. (**c**) trousers.

shākhki, N.S. (**b**) wood, wooden, door, window, box, stick, peg, etc. P. **shākh** (1) branch of a tree ; (2) hard, rough.

shengerd, N. (**c**) city.

sheytumi, N.S. (**e** or **d**) something. (Ar. **shay** and Gypsy suff. tum-i).

shift, N.Q. (**c**) milk. (Dial. Persian **shift, shīt**).

sobut, N. (**c**) old (man).

sunguro, N. (**c**) stone, sand.

suto, N.Q. (**c**) black.

talkhaki, tarkhaki, tarkhkim, S. (e) tobacco (fr. P. **talkh** bitter).

tashtik (?), N. (c) low, below, under.

til, S.Q. (a) oil, butter. H. tel.

(be)-tubur, S.Q. (c) verb. trans., to beat, strike.

(be) tup, tub, N.S. (c) verb. intrs., to sit, lie down. **war-tup,** to rise, to get up.

turushnok, turusno, S. (b) sour, pomegranate, sour milk, vinegar, etc. (fr. P. **turush**, sour and suffix **nok**).

unde, N.Q. (c) chief, headman, mulla, judge.

uruk (?), S. (c) steel.

(bu)-wars, wurs, N.S.Q. (c) verb. intrans., to come, arrive.

zabul, zaul, N. (c) barley.

zil, v. **jil.**

IV.

Corrections and amendments to my paper "On the Language of the gypsies of Qainat (in Eastern Persia). J.A.S.B. Vol. X, Nos. 10 & 11, 1914, pp. 439-455.

Page 441, line 6 to be a continuation of line 5.
" 8, after stop the following sentence to be inserted: "It is one more tribe which gypsies could meet in their migrations." The next sentence "We know," etc., to begin on new line.
" 17, 30, 41 & 45, inst. of Zōṛī read Lōṛī.
" 31, " " Zōpī " Lōpī.
" 442, " 1 & 7, " " Zōṛī " Lōṛī.
" 6, inst. of Zūlī and Zūrī read Lūlī and Lūrī.
" 9, " " Zūristān " Lūristān.
" 443, " 12, " " them " Persians.
" 33, erase "of course."
" 444, " 33, inst. of Zirutt " Jīruft.
" 43, " " Zōṛī " Lōṛī.
" 445, " 2, " " " " "
" 18, erase "the direct heirs of Zend."
" 25, inst. of g, read q.
" 27, after the word "sign" insert ′.
" 36, " p insert "and f."
" 446, " 6, inst. of diz, read dir.
" 29 & 30, to be erased completely.
" 447, " 4, inst. of nā, read hā.
" 11, " " T. " P.
" 22, " " ān; ū " ān and ū.
" 25, inst. of us, read we.
" 45, " " dōrū-nīm, read dōrūnīm.
" 448, " 1, erase P. burj.

Page 448, line 2, erase Ar. qal'a.
" 5, " Eg., per.
" 14, " H. baithnā.
" 15, " H. bhukhā.
" 18, " H. bujhānā.
" 27, " H. and inst. of buktōk, read buhtōk.
In the end add " + G. suff. tōk.
" 31, erase H. chiriā, P. murgh, Eg. cherik.
" 40, " H. dokhī.
" 43, inst. of Kamadān, read Hamadān.
" 450, " 1, erase H. daurnā.
" 3, inst. of Zōrī read Lōṛī.
" 7, erase Q. da khew, P. dar khāb (khwāb).
" 9, " P. āwāz.
" 14, " H. laṛkī, Eg. rakli.
" 15, " Punjabi udhia,
" 19, " P. khar.
" 21, " Eg. gooshum.
" 24, " H. ghatānā.
" 26, inst. of qawn, read qawm.
" 35, erase P. gerdīdan.
" 40, " P. pāre, Eg kotor.
" 43 & 44, erase from Skt..... till ....zen.
" 451, " 6, erase H. ji.
" 10, inst. of kalīl, read qalīl. Erase Eg. koosi.
" 13, erase P keshīden.
" 20, " (H. jhapaṭnā or gayā ?).
" 21, " P. kāghiz, H. kāgut.
" 24, " (?).
" 31, " (H. putr ?)
" 37-38, erase from Q. kelut.... till..kumbo.
" 40, inst. of B. kur, read P. kūr.
" 42, erase P. kujā.
" 45, inst. of rukh, read lakṛī.
" 452, " 2, erase P. panīr.
" 5, " P. rik, rig.
" 7, " Punjabi lelā (lamb).
" 8, " P. shutur.
" 16, " (All in brackets).
" 17, " from Eg..... to the end.
" 23, " P. meges, T. mohia.
" 25, " P. nān.
" 26, " from T..... till....meli.
" 27, " " Eg. .... till....marnā.
" 29, " H. samajhnā ?
" 31, " manushya (Skt.).
" 38, inst. of muhur read nuhur, erase H. ānkh.
" 40, insert H. āg.
" 42, erase P. zardālū.

Page 453, line 1, inst. of okyōl(īden), read okhōl(īden).
,, 10, erase P. pirāhan.
,, 11, ,, P. pārcha.
,, 13, ,, H. mārnā.
,, 18, ,, P. pambe.
,, 30, inst. of thamār, read thamar.
,, 31, erase P. sabz.
,, 33, ,, H. samajhnā.
,, 37, ,, P. shālwār.
,, 41, inst. of bread, read beard.
,, 454, ,, 8, erase H. sulgānā.
,, 21, ,, P. khurmā.
,, 31-32,, from P. .... till final bracket.
,, 455, ,, 5 and 7, erase commas at the end of the lines.
,, 6, ,, ,, after "ajūden."
,, 8, the inverted commas to follow "ajonīm."
,, 10, erase commas after "hāti" and "mejōye."
,, 12, instead of sī read sī- (it is a part of the next rdew.)
,, 14, inst. Yumush read yumush. Erase comma after this word and after "ane."
,, 16, erase commas after "hōte" and "beẏnī."

15. Note on Persistent Oviducts and Abnormal Testes in a male Rana tigrina.

By D. R. Bhattacharya, M.Sc.; and B. K. Das, M.Sc.,
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(One text-figure.)

While demonstrating to a junior class of students in the month of September 1919, we came across a male frog (*Rana tigrina*) which showed several abnormalities in the reproductive organs. Externally the animal possessed the characteristic features of a male, viz. paired vocal sacs and the thickened thumb. Internally, however, there were a pair of persistent oviducts, but no trace of ovaries. There were a pair of testes of abnormally unequal size. The ureters, kidneys and other structures more or less resemble the normal type.

The disposition and character of the oviducts.

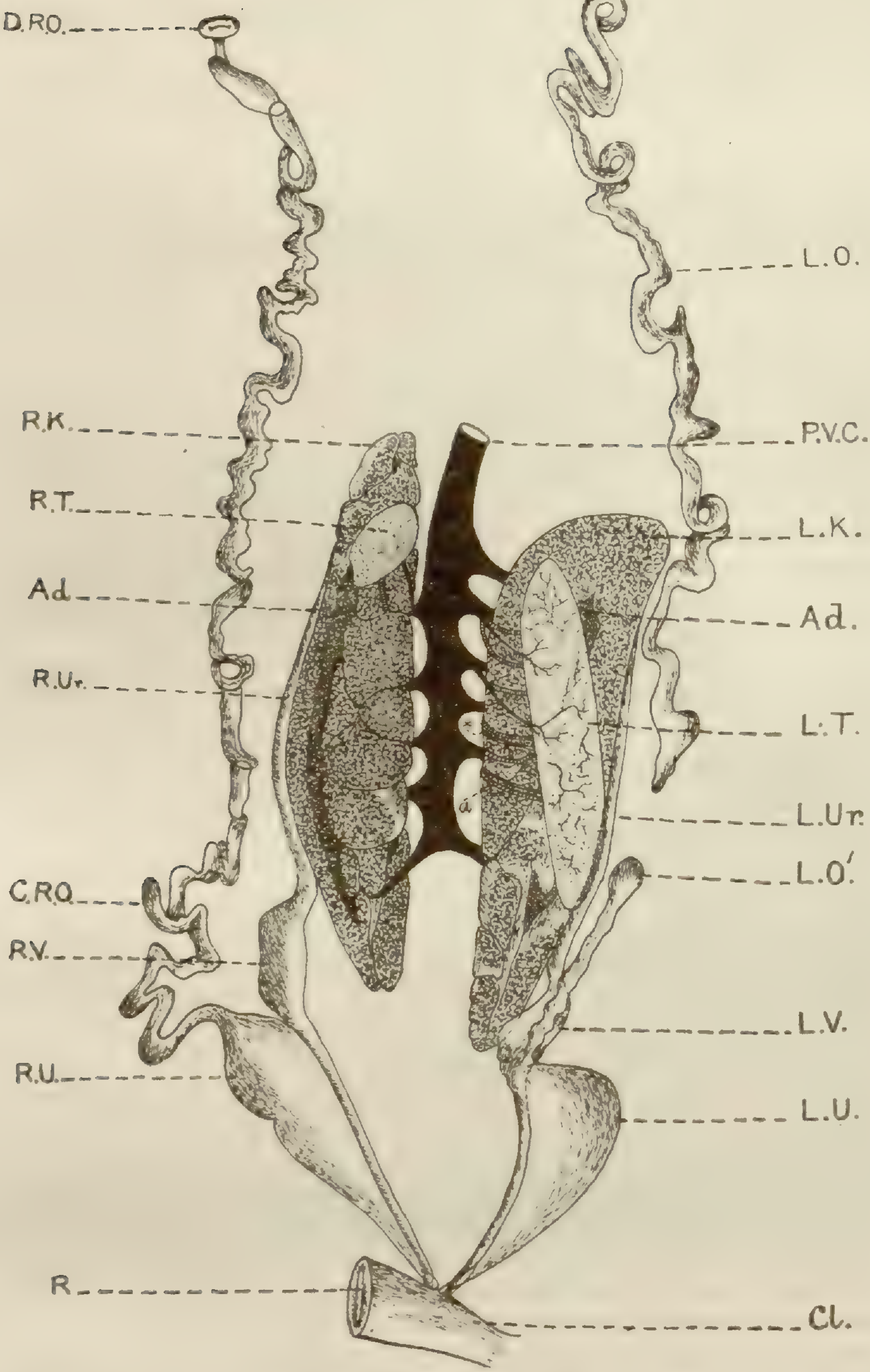
A pair of convoluted tubes, certainly homologous with the oviducts of the female, is present.

The right oviduct opens by a wide mouth or ostium near the base of the right lung (text-fig. 1). The mouth (D.R.O.) is followed by a narrow and straight tube about 1 mm. in length. The anterior and middle portions of the tube are thin-walled and less convoluted than the posterior portion, which is greatly convoluted and the walls of which are thicker and highly glandular. At the posterior end the oviduct becomes enlarged into a thin-walled sac or uterus (R.U.)

The left oviduct is less developed and looks like a vestigial structure. Anteriorly it arises as a solid cord of degenerate cells about 4 mm. in length, there being no mouth present. This is followed by a thin-walled tubular portion which leads back to a slightly wider and coiled portion, ending blindly behind at a distance of about 1·7 cm. from the anterior end of the left kidney. The interruption in the oviduct has a length of about 4 mm. The duct recommences as a blind bulb-like swelling (text-fig. 1. L.O.) followed by a short slightly convoluted and thin-walled tube which becomes enlarged posteriorly to form the uterus—the two uteri opening close together on the dorsal wall of the cloaca.

The disposition, relative size and minute structure of the right and left testes.

The right testis (i.e. the one on the side having a well developed oviduct) is very much smaller than the left one and



TEXT-FIGURE 1. (×2)

Semi-diagrammatic ventral view of the reproductive organs, the right testis being displaced forwards to show its blood supply.

a, spermatic artery; Ad, adrenal body; cl, cloaca; C.R.O., coiled mass of the right oviduct; D.R.O., mouth or ostium; L.K., left kidney; L.O., left oviduct; L.O., left oviduct just reappearing; L.U., left uterus; L. Ur., left ureter; L.T., left testis; L.V., left vesicula seminalis; P.V.C., posterior Vena Cava; R.K., right kidney; R.T., right testis; R. rectum; R.U., right uterus; R.Ur., right ureter; R.V., right vesicula seminalis; S.L.O., degenerate anterior end of left oviduct; X., vas efferens.

is situated about 6 mm. behind the anterior end of the right kidney on its ventral side. It is 6 mm. in length and 3·5 mm. in breadth. It is more or less oval in shape and is about 19·5 times lighter in weight than the left testis. Germ cells are scattered throughout the substance of the gonad. Though sections about 6 M. thick have been cut and examined, there seems to be no sign of distinct lobule formation in any of the sections. The germ cells in various early stages of development may be seen to be segregated into groups, but curiously enough definite crypts and their lumina are conspicuous by their absence. The spermatozoa, though fairly well developed, are not yet, probably, quite mature. The primitive germ cells and early dividing stages of spermatogonia are relatively much greater in number than those in the left testis. Another peculiar feature is that there are no vasa efferentia in connection with this testis. A single branch brings blood to it from the first renal artery of the right side. and a single vein carries the blood away and joins the first renal vein of its side.

The left testis is of an elongate shape and occupies the greater part of the ventral surface of the middle region of the left kidney. It is 17 mm. in length and 4·5 mm. in breadth. It shows a distinctly lobular structure. No distinct lumen, however, could be found such as may be seen in the testis of a normal frog taken at about the same season of the year. The germ cells show various stages of development from the spermatogonia down to mature spermatozoa. There are two vasa efferentia arising from this testis and entering the inner edge of the left kidney. The blood supply is very peculiar. From the first *right* renal artery a branch is given off which subdivides into two and both branches curve over to the left side and enter the left testis. Four other spermatic arteries are given off as branches from the second *left* renal artery. There are thus five renal arteries in all arising from the dorsal aorta.

The kidneys and urinogenital ducts are normal in type.

Conclusion.

Summarising the above, it may be said (1) that both the oviducts—the left one specially, are smaller in length and much less convoluted than the oviducts found in a normal frog; (2) the right testis is much smaller and the left testis much bigger than the testes of a normal frog of about the same size and taken at about the same period of the year. The minute structure of the right testis, its meagre blood supply, and the absence of the vasa efferentia would seem to suggest that the testis after reaching a certain stage of development has been arrested in its growth and is now

tending to become degenerate and non-functional. It is an interesting fact that the oviduct of the right side, on which the testis is so small and rather undeveloped, should be so well developed, whereas the oviduct of the left side, on which the testis is abnormally developed, should be so small and degenerate and not even continuous throughout its whole length.

16. A short note on the cretaceous echinoid *Cyrtoma*, M'clelland.

By H. C. Das-Gupta, M.A., F.G.S.

In the year 1917 I had an opportunity of visiting the Khasi hills in charge of a party of students from the Presidency College, Calcutta. My collections from these hills include some cretaceous fossils, amongst which the following echinoids have been determined besides one biserial (?) diadematoid cast, the generic determination of which is not possible :—

1. *Hemiaster Sp.*
2. *Discoidea Sp. aff. infera*, Desor.
3. *Pyrina ataxensis*, Cott. *var. pentagonalis*, Nœtl.
4. *Pyrina ataxensis*, Cott. var. *tumida*, Nœtl.
5. *Cyrtoma Herschelliana*, J. M.

The genus *Cyrtoma* was established by the late Mr. J. M. M'clelland, one of the pioneer workers in the field of Indian geology.[1] The fossils were all obtained from the Khasi hills and though M'clelland did not mention the exact locality from which the specimens were obtained, it appears from his descriptions that they were all obtained from the neighbourhood of Cherrapunji.[2] M'clelland supposed that the echinoid-bearing beds were, in probability, equivalent to the new Red Sandstone. As was subsequently remarked by the late Dr. Oldham, this supposition was due to the erroneous idea of the time that good coal was confined to rocks of some particular age.[3] There is an exposure of cretaceous rocks at Mamlu, near Cherrapunji, and, according to Medlicott, they contain a *Conoclypeus*, not unlike *C. ovatus*, d'Orb.[4] The echinoids that I obtained from this Mamlu exposure are quite unlike *C. ovatus*, d'Orb..[5] but a comparison of the specimens obtained by me with the figures of *Cyrtoma* published by M'clelland leaves no room to doubt the identity of these two suites of fossils. M'clelland described a number of species of *Cyrtoma*, but it is quite clear that they are all individual variations and should all be united under one specific name, *Cyrtoma Herschelliana*, J. M., the name adopted by me in the foregoing list. None of the specimens collected by me shows

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1 Cal. Journ Nat. Hist., Vol. I, pp. 155–187 with plates (1840).
2 Op. cit., p. 184.
3 Mem. Geol. Surv. Ind., Vol. I, pp. 164–165, footnote (1869).
4 Mem. Geol. Surv. Ind., Vol. VII, p. 182 (1871).
5 Pal. Fr. Echin. terr-cret., VI, pp 345–347, pls. 945, 946.

the oral surface, while the specimens of M'clelland have oral surface as casts. In a short note dealing with the upper cretaceous rocks of Assam[1] Dr. Spengler mentioned the occurrence of *Stigmatopygus elatus*, Forbes in them, and there is no doubt that under this name Dr. Spengler refers to the forms determined as *Cyrtoma Herschelliana*, J. M., by me.

Stigmatopygus elatus, Forbes was originally described as *Nucleolites* (*Cassidulus*) *elatus*.[2] The genus *Stigmatopygus* was established by d'Orbigny in 1885[3] with *S. galeatus* as the type species and *N. elatus* was transferred to this genus, an arrangement that was also followed by Stoliczka.[4] It appears, however, that this arrangement is not advocated by Pomel who treats *Cyrtoma* as a distinct echinoid genus and mentions the existence of *Cyrtoma elatus* and also expresses the opinion that *Pygorhynchus planatus* and *P. testudo* should be referred to the same genus.[5] As far as can be judged by the materials available to me it appears that the Khasi hill genus may be compared with *Stigmatopygus*, d'Orb. In the latter the mouth is a little excentric, " placée au milieu d'une surface plane et entourée de cinq tubercles buccaux et de cinq rosettes de pores très-prononcées, sans sillons ni ondulations autour,[6]" but in *Cyrtoma* the flat inferior surface is provided 'with five clavate ambulacra prolonged to margin.'[7] It appears, however, from the note published by Dr. Spengler that he had better materials to deal with and the lower surface of the Khasi hill specimens shows the five buccal tubercles and rosettes.

In his work dealing with the revision of the echinoid genus the late Prof. Duncan put *Cyrtoma* as synonym of *Pygorhynchus*, Agassiz,[8] but my study of the nature of *Cyrtoma* has led me to hold an opinion quite different from this and that for reasons given below.

Pygorhynchus was originally described as a distinct genus by Agassiz, but a sub-generic value was assigned to it by Duncan who put it under the genus *Cassidulus*, Lam.[9]

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[1] Centralbl. f. Min. Geol. u. Pal. 1915, pp. 621–623. This paper, being published during the war, was not previously available in Calcutta. Only very recently a reprint of the paper arrived here and Prof. Vredenburg very kindly drew my attention to it for which I am thankful to him.

[2] Trans. Geol. Soc., Vol. VII, p. 162.

[3] Pal. Fr. terr cret., Vol. VI, p. 331.

[4] Pal. Ind. Ser., VIII, Vol. IV, p. 98 (1873).

[5] Pomel: Echinodermes. p. 65.

[6] Pal. Fr. terr-cret., Vol. VI, p. 331. [7] M'clelland op. cit., p. 185

[8] Journ. Linn. Soc. (Zoology), Vol. XXIII, p. 182 (1891).

[9] Op. cit., p. 182. Forbes considered *Pygorhynchus* to be a subgenus of *Nucleolites* (Trans. Geol. Soc. Lond. 2nd Ser., Vol. VII, p. 161). Stoliczka pointed out that there was very little difference between *Cassidulus* and *Pygorhynchus* (Pal, Ind. Ser. VIII, Vol. IV, p. 99, 1873).

Agassiz described two species under this generic name,[1] but the characters of the species differed, to such an extent, from those which were attributed to the genus, that d'Orbigny had to create a new genus (*Botriopygus*) for the reception of these species and a few more,[2] but the generic name of Agassiz was retained and a list was given of the species belonging to this genus.[3] This list was modified by Desor[4] and there have been subsequent additions to the list since then.[5] In 1898 Lambert created a new genus, *Plagiopygus*, to include the so-called (soi-disant) tertiary species of *Pygorynchus*,[6] but it has been argued by Fourtau that the genus *Pygorhynchus* is very well defined and no case for the establishment of a separate genus has been made out.[7]

According to Desor *Pygorhynchus* has a 'periprocte supra-marginal et transversal' with 'peristome excentrique,' while the figures and descriptions of the species I have been able to lay my hands on all agree in these two characters.[8] *Cassidulus*, of which *Pygorhynchus* is a sub-genus, according to Duncan. has a peristome excentric in front. Thus it is clear that if *Cyrtoma* and *Pygorhynchus* are identical, the former should have a periproct which is supra-marginal and transverse. As has been explained above, for finding out the characters of *Cyrtoma* I have to rely on M'clelland's description with the figures and the few specimens collected by me. From an examination of these it is quite clear that the periproct is supra-marginal and longitudinal, while the peristome is central[9] and accordingly we may safely conclude that *Cyrtoma* and *Pygorhynchus* are not identical.

Stigmtopygus galeatus, the type species on which *Stigmatopygus*, d'Orb., was established has a 'périprocte en forme de bouteille surmonté d'un bourrelet assez notable.'[10] *S. elatus* has an anal opening quite different from this. In his synopsis

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[1] Agassiz: Echinodermes fossiles de la Suisse, Vol. I, pp. 53–57 (1839).

[2] Pal. Fr. terr-cret., Vol. VI, pp. 334–342.

[3] Op. cit., p. 321.

[4] Desor: Synopsis des Echinides fossiles, p. 297.

[5] e.g. *P. Tripolitanus*, Krumm (Palaeontographica. LIII, p. 89 (1906).

[6] Bull. Soc. belge de Geol. et de Pal Tome XI M , p. 162.

[7] Fourtau: Catalogue des invertébrés fossiles de l'Égypt. terr-tert. 1st pt., pp. 25–28. There seems to be some confusion regarding the type of *Pygorhynchus*. It is usual to look upon *P. obovatus* as Agassiz's type for this genus But it has been shown by Fourtau that 'ce type est le *P. grignonensis* dont M. Lambert a fait le type de ses *Plagiopygus*.'

[8] An exception has been noted in the case of *P. subcylindricus*, Agas. According to Desor 'par la position de son périprocte inframarginal, cette espécee forme en quelque sorte le passage des *Pygorhynchus* aux *Echinolampas*.' The peristome of this is central (op. cit., p. 298).

[9] M'clelland: op. cit., p. 185.

[10] Desor: op. cit., p. 288.

Desor has removed *S. Galeatus* to *Rhynchopygus* (p. 288) and has appended the following note to his description of *Stigmatopygus* :—

'La forme du périprocte sur laquelle M. d'Orbigny s'est fondé pour créer ce genre est sans doute très caractéristique, mais nous ne pensons pas qu'elle soit á elle seule suffisante pour justifier une coupe generique. Aussi aurions nous hésité a séparer ce type du genre *Echinanthus*, si cette forme particulière du périprocte n'était ici combinée avec une surface inférieure plane, tandis que le dessous des *Echinanthus* est au contraire très concave' (p. 296). Desor has evidently taken *S. elatus* as the type of the genus.

From these considerations it appears that *Cyrtoma* should be regarded as a distinct genus with a supra-marginal and longitudinal periproct, a flat lower surface with a central and actinal peristome provided with a floscelle and that the name *Stigmatopygus*, d'Orb., should be rejected from the generic names of the echinoids or if it is thought advisable to retain the name with *S. galeatus* as the type, the Indian forms cannot be referred to that genus.

In conclusion it may be pointed out that after a preliminary study of the Khasi hill cretaceous fossils I had just finished the detailed study of the echinoids when my attention to Dr. Spengler's paper was drawn. I have accordingly thought it advisable to postpone a further study of the materials and await the publication of Dr. Spengler's paper. It is, however, interesting to observe that the two European species with which the Khasi hill echinoids agree are of Senonian age and this is in conformity with Dr. Spengler's observations, which are quoted below :—

'Meine Untersuchungen haben ergeben, dass nicht die geringsten Anhaltspunkte für ein cenomanes Alter eines Teiles der Assamkreide vorhanden sind, sondern dass die ganze bisher bekannte Oberkreide von Assam dem Obersenon angehört' (p. 622).

17. The Colophons of Four Ancient Sanskrit Manuscripts.

By R. C. Majumdar.

In an article in *Indian Antiquary*, 1918, pp. 109 ff. Mr. R. D. Banerji has repeated the statement, originally made in the *Pālas of Bengal*,[1] that Vigrahapāla II ruled for 26 years. The statement rests upon the colophon of a MS. of the Pañcharakṣā, which runs as follows :—

Parameśvara-Paramabhaṭṭāraka-Paramasaugata-Mahārājādhirāja-Śrīmad-Vigrahapāladevasya pravardhamāna-vijayarājye (about 15 indistinct akṣaras) *Samvat* 26 *Āṣāḍha dina* 24.

Mr. Bendall who first published this colophon comments on it as follows :—"There were three sovereigns called Vigrahapāla in Bengal between A.D. 910 and 1090. From the great similarity, however, between the writing of this MS. and that of the Cambridge MSS. written during the reigns of the two kings intervening between Vigrahapāla II and III it is safest to assign this manuscript to one of these reigns, which brings the writing of the MS. to either A.D. 1015 or 1100."[2] In a footnote to the above he remarks :—

"Cunningham (A. S. Ind. XV., 154) suggests 30 years as the probable collective duration of the reigns of Nayapāla and Vigrahapāla III. But Nayapāla, as we now know from the Cambridge MS. above cited, reigned at least 14 years ; consequently, if, as Cunningham supposes, Mahīpāla died about 1060, the present MS. must be at least as late as 1100 and possibly somewhat later. On the whole, therefore, the date A.D. 1015 (Vigrahapāla II) seems rather more probable."

The argument contained in the above passage may be analysed as follows :—(i) That the colophon by itself does not help us to determine whether the king Vigrahapāla referred to therein was the first, second or third of that name. (ii) That it is only the similarity it bears to other MSS. written during the period between the reign of the second and third kings of the name that makes it likely that it should be assigned to one of them. (iii) That as by assigning it to Vigrahapāla III it has to be brought down to so late a period as 1100 A.D., or even somewhat later, the identification of Vigrahapāla of the colophon with the second king of the same name is more probable.

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[1] Memoirs of the Asiatic Society of Bengal, vol. V, No. 3, p. 66.

[2] Catalogue of the Sanskrit Manuscripts in the British Museum. p. 232.

Now, nobody, I believe, would question the soundness of the first two points above. The third, I am afraid, is untenable, for it rests upon false premises. There is hardly any ground for the assumption either that Mahīpāla lived till 1060 A.D. or that Vigrahapāla ruled in the eleventh century. The reasons which led Cunningham to propound such a view are laid down as follows:—

"Veracharya, a Raja of Orissa, is said to have been tributary to him (Mahipala); but there is no such name in the list of kings given by Dr. Hunter, which is:—

A.D. 999	Nritya Kesari.
,, 1013	Narsinh Kesari.
,, 1024	Kurma Kesari.
,, 1034	Matsya Kesari.
,, 1050	Varaha Kesari.

Amongst these the only name at all like Veracharya is that of Varaha Kesari but, as his reign did not begin until A.D. 1050, the identification would show that the reign of Mahipal must have extended to A.D. 1055 or 1060."

These arguments might have been excused in Cunningham's time, but they cannot claim to be seriously considered in the present state of our knowledge. As a matter of fact, as Mr. R. D. Banerji has himself maintained, the probability is that Vigrahapāla II and Mahīpāla I ceased to rule before 980 and 1026 A.D. respectively. It thus follows that the colophon in question should be assigned to either Vigrahapāla II or Vigrahapāla III, and there is no ground to hold that any one of these suppositions is more probable than the other.

So far as regards Mr. Bendall's position. Now let us turn to Mr. R. D. Banerji's statement to the effect that the MS. in question was written in the 26th year of Vigrahapāladeva II. This is not supported even by what Mr. Bendall says. For he at best held it as more probable that the MS. should be referred to the reign of Vigrahapāla II, whereas Mr. Banerji looks upon this as a certain fact But in view of what has been said above it cannot be held to be even probable, and of course far less a certain conclusion.

Again Mr. Banerji has fallen into a similar error with regard to his assumption that the colophon of the copy of *Aṣṭasāhasrikā prajñāpāramitā* collected by M.M. Haraprasad Sastri for the Asiatic Society of Bengal[1] refers to the sixth year of Mahīpāla I.[2] For there is nothing in the colophon itself to show that the king Mahīpāla referred to therein is Mahīpāla I and not Mahīpāla II. Indeed this is clearly pointed out by Dr. Theodor Bloch who noticed the colophon.

There is another instance of a similar error on the part of

[1] *Proc. A.S.B*, 1899, p. 69. [2] *Pālas of Bengal*, p. 75.

Mr. Banerji, although it is shared to some extent by Dr. Barnett. The colophon of a MS. of the *Aṣṭasāhasrikā prajñā-pāramitā* in the British Museum runs thus:—"*Parameśvara-paramabhaṭṭāraka-paramasaugata-Mahārājādhirāja-Śrīmad-Gopāladeva-pravarddhamāna-kalyāṇa-vijaya-rājye-tyādi samvat* 15 *Āśvine dine* 4 *Śrīmad-Vikramaśilā-deva-vihāre likhit-eyaṁ bhagavatī.*" Dr. Barnett remarks on this MS:—"Now this volume very closely resembles the MS. Or. 3346, especially in its colophon. The latter was written in the reign of Vigrahapāla, whom Mr. Bendall with great probability identifies with the second king of that name. Accordingly we may conclude that the king mentioned in the MS. Or. 6902 is Vigrahapāla's immediate predecessor, Gopala II."[1] Mr. Banerji proceeds a step further and definitely assigns the MS. in question to the 15th year of Gopāla II.[2] It has been pointed out above that Mr. Bendall's provisional identification of Vigrahapāla referred to in the colophon of MS. Or. 3346 with king Vigrahapāla II rests upon hypotheses which are no longer tenable. This considerably weakens the assumption of Dr. Barnett and altogether upsets the confident assertion of Mr. Banerji.

A fourth instance of similar error is furnished by the ascription to Mahīpāla I of a MS. or Aṣṭasāhasrikā Prajñāpāramitā in the University Library, Cambridge, referred to by Mr. Bendall in his catalogue, p. 101.[3] Its colophon runs thus:—"*Parameśvara-paramabhaṭṭāraka-paramasaugata-Mahārājādhirāja-Śrīmān-Mahīpāladeva pravarddhamāna-vijayarājye samvat* 5 *Aśvine kṛṣṇe.*" There is thus nothing to show whether the king Mahīpāla referred to above is the first or the second king of that name. It is true that Mr. Bendall referred it to Mahīpāla I, but he wrote in 1883 when the existence of Mahīpāla II was not known to the learned world, and he was therefore perfectly justified in assigning the work to the only Pāla king of that name known to him. But to-day, when a second Mahīpāla is known to us, an author can hardly be excused if he blindly copies the remarks of Mr. Bendall in 1883.

The above discussion will show that Mr. Banerji's method of deducing historical information from the colophons of MS. is not very scientific, and is calculated to lead some scholars astray. I have come across a paper on Pāla chronology where the elaborate and painstaking calculations of the author have been rendered quite valueless by his tacit acceptance of the data of colophons as interpreted by Mr. Banerji.

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[1] *J.R.A.S.* 1910, pp. 150-151.
[2] *Pālas of Bengal*, p. 65.
[3] *Ibid.*, p. 74.

18. The Later Mauryas and the Decline of their Power.

By Hemchandra Raychaudhuri, M.A.

During the fifth and fourth centuries B.C. the *Mahājanapadas* of ancient India were gradually merged in the Magadha Empire which under Aśoka extended from the foot of the Hindukush to the borders of Tamilakam. But the withdrawal of the strong arm of Piyadasi was perhaps the signal for the disintegration of this mighty monarchy. "His sceptre was the bow of Ulysses which could not be drawn by any weaker hand." The provinces fell off one by one. Foreign barbarians began to pour across the north-western gates of the empire and a time came when the proud monarchs of Pāṭaliputra and Rājagṛiha had to bend their knees before the despised provincials of Andhra and Kaliṅga.

Unfortunately no Kauṭilya or Megasthenes has left any account of the later Mauryas. It is impossible to reconstruct a detailed history of Aśoka's successors from the scanty data furnished by one or two inscriptions and a few Brāhmaṇical, Jain and Buddhist works.

Aśoka had many children. In Pillar Edict vii he pays attention to the distribution of alms made by all his children who live, some near him and others in the provinces, and in particular to those made by the "princes, sons of the queens." It is to this last category that belonged the Kumāras who represented the imperial authority at Taxila, Ujjayinî and Tosali. Tîvara, the only son named in the inscriptions, does not appear to have mounted the throne. Three other sons, namely, Kunāla, Mahendra and Jalauka are mentioned in literature. It is, however, uncertain whether Mahendra was a son of Aśoka or his brother.

The *Vāyu Purāṇa* says that after Aśoka's death his son, Kunāla, reigned for eight years. Kunāla's son and successor was Bandhupālita, and Bandhupālita's *dāyāda* was Indrapālita. After Indrapālita came Devavarman, Śatadhanus and Bṛihadratha.

The *Matsya Purāṇa* gives the following list of Aśoka's successors :—Daśaratha, Samprati, Śatadhanvan and Bṛihadratha.

The *Vishṇu Purāṇa* furnishes the followings names :—Suyaśas, Daśaratha, Saṅgata, Śāliśūka, Somaśarman, Śatadhanvan and Bṛihadratha.

The *Divyāvadāna* (Cowell and Neil's edition, p. 433) has the following names :— Saṁpadî, Vṛihaspati, Vṛishasena. Pushyadharman, and Pushyamitra.

It is not an easy task to reconcile the divergent versions of the different authorities. The reality of the existence of Kunāla is established by the combined testimony of the Purāṇic and Buddhist works as well as the evidence of the *Pâṭaliputrakalpa* of Jinaprabhasuri, the well-known Jain *Āchārya* and writer. The name Suyaśas found in the *Vishṇu* and the *Bhāgavata Purāṇas* was probably a *biruda* or epithet of this prince. Tradition, as we have already seen, is not unanimous regarding the accession of Kunāla to the imperial throne. He is reputed to have been blind. His position was, therefore, probably like that of Dhṛitarāshṭra of the Great Epic and though nominally regarded as the sovereign, he was physically unfit to carry on the work of government which was presumably entrusted to his favourite son, Samprati, who is described by the Jain and Buddhist authorities as the immediate successor of Aśoka.

Kunāla's son was Bandhupālita according to the *Vāyu Purāṇa*, and Samprati (Saṁpadî) according to the *Divyāvadāna* and the *Pāṭaliputrakalpa*. Either these princes were identical or they were brothers. If the latter view be correct then Bandhupālita must be identified with Daśaratha whose reality is established by the brief dedicatory inscriptions on the walls of cave-dwellings at the Nāgārjuni Hills which he bestowed upon the Ājîvikas. Daśaratha who receives the epithet '*devānaṁpiya*' in the inscriptions was a grandson of Aśoka according to the *Matsya* and *Vishṇu* Purāṇas, and the predecessor of Samprati (*Variant* Saṅgata) according to the same authorities.

Indrapālita must be identified with Samprati or Śāliśūka according as we identify Bandhupālita with Daśaratha or Samprati. In the matter of the propagation of the Jain faith, Jain records speak as highly of Samprati as Buddhist records do of Aśoka. Jinaprabhasuri says, " in Pāṭaliputra flourished the great king Samprati, son of Kunāla, lord of Bhārata, with its three continents, the great Arhanta who established *vihāras* for Śramaṇas even in non-Aryan countries." Dr. Smith shows good grounds for believing that the dominions of Samprati included Avanti and Western India.

The existence of Śāliśūka is proved not only by the testimony of the *Vishṇu Purāṇa* but also by that of the *Gārgî Saṁhitā* and the *e Vāyu* manuscript referred to by Mr. Pargiter. Is he identical with Vṛihaspati, son of Samprati, according to the *Divyāvadāna*?

Devavarman and Somaśarman are variant readings of the same name. The same is the case with Śatadhanus and Śatadhanvan. It is not easy to identify Vṛishasena and Pushyadharma. Possibly they are merely *birudas* of Devavarman and Śatadhanvan.

The last Maurya, Bṛihadratha, is mentioned not only in

the Purāṇas but also in Bāṇa's *Harshacharita*. He was assassinated by his general Pushyamitra Śunga who is wrongly described by the *Divyāvadāna* as of Maurya descent.

There can be no doubt that during the rule of the later Mauryas the Magadha Empire experienced a gradual decay. Aśoka died in or about the year 232 or 231 B C. Within twenty-five years of his death a Greek army crossed the Hindukush which was the Maurya frontier in the days of Chandragupta and his grandson. The *Yuga Purāṇa* section of the *Gārgî Saṁhitā* bears testimony to the decline of the Mauryan power in the Madhyadeśa after the reign of Śáliśūka.

According to Mahāmahopādhyāya Haraprasād Śāstrî (J.A.S.B. 1910, p. 259) the dismemberment of the Maurya Empire was due to a reaction promoted by the Brāhmaṇas.

Among the causes of the alienation of the Brāhmaṇas the foremost place is given to Aśoka's edict against animal sacrifices. The edict, in Paṇdit Śāstrî's opinion, was certainly directed against the Brāhmaṇas as a class and was specially offensive because it was promulgated by a Śūdra ruler. As to the first point we should remember that prohibition of animal sacrifices did not necessarily imply hostility towards Brāhmaṇas. Long before Aśoka Brāhmaṇa sages whose teachings have found a place in the Holy *Śruti*, the most sacred literature of the Brāhmaṇas, declared themselves in no uncertain terms against sacrifices, and in favour of *Ahimsā*. In the *Muṇḍaka Upanishad* we have the following passage:—

"प्लवा ह्येते अदृढ़ा यज्ञरूपा
अष्टादशोक्तमवरं येषु कर्म्म ।
एतच्छ्रेयो येऽभिनन्दन्ति मूढ़ा
जरामृत्युं ते पुनरेवापि यन्ति ॥ १ । २ । ७

"Frail, in truth are those boats, the sacrifices, the eighteen. in which this lower ceremonial has been told. Fools who praise this as the highest good, are subject again and again to old age and death." In the *Chhāndogya Upanishad* (iii. 17. 4) Ghora Āṅgirasa lays great stress on *Ahimsā*.

As to the second statement we should remember that tradition is not unanimous in representing the Mauryas as Śūdras. The Purāṇas never call them Śūdras They assert, no doubt, that after Mahāpadma there will be kings of Śūdra origin. But this statement cannot be taken to mean that *all* the Post-Mahāpadman kings were Śūdras, as in that case the Śuṅgas and the Kāṇvas also will have to be classed as Śūdras. The *Mahāvaṁśa* (Geiger's translation, p. 27) refers to the Moriyas as a noble clan. In the *Mahā-parinibbāna-sutta* the Moriyas are represented as belonging to the Kshatriya caste.

In the *Divyāvadāna* Aśoka is styled as a Kshatriya who considers it derogatory to take onions.

Having referred to the prohibition of animal sacrifices Pandit Śāstrî says: "This was followed by another edict in which Aśoka boasted that those who were regarded as gods on earth have been reduced by him into false gods. If it means anything it means that the Brāhmaṇas who were regarded as Bhūdevas or gods on earth had been shown up by him."

The orginal passage referred to above runs thus :—

Y (i)-imāya kālāya Jaṁbudipasi amisā devā husu te dāni m (i)s- kaṭā.

M.M. Śāstrî followed the interpretation of Senart. But Professor Sylvain Lévi has shown that the word *amisā* cannot stand for Sanskrit *amṛishā*, for in the Bhābru edict we find *musā* and not *misā* for Sanskrit *mṛishā*. The recently discovered Māski version reads *misibhūtā* for *misaṁ-kaṭā* showing that the original form was *misrîbhūtā*. It will be grammatically incorrect to form *misibhūtā* from Sanskrit *mrishā*. The word *misra* means mixed. And *misrîbhūtā* means "made to mix." There is thus no question of "showing up" any body. The true import of the passage has been pointed out by Prof. Bhandarkar, in Ind. Ant., 1912, p. 170.

M.M. Śāstrî adds that the appointment by Aśoka of *Dharma māhāmātras*, i.e. of superintendents of morals, was a direct invasion of the rights and privileges of the Brāhmaṇas. It is hardly correct to represent the *Dharma mahāmātras* as superintendents of morals when their duties consisted in the establishment of piety (which included liberality to Brāhmaṇas) the promotion of the welfare of the Yavanas, Kāmbojas, Gāndhāras, Brāhmaṇas and others, the prevention of wrongful imprisonment or chastisement, the deliverance of men smitten by calamity, the supervision of the female establishments of the king's brothers and other relatives, and the administration of alms-giving. These duties certainly were not a direct invasion of the rights and privileges of the Brāhmaṇas. Moreover, there is nothing to show that the *Dharmamahā mātras* were wholly recruited from the non-Brāhmaṇas.

M.M. Śāstrî next refers to the passage where Aśoka insists upon his officers strictly observing the principles of *Daṇḍasamatā* and *Vyavahārasamatā*. He takes the expressions to mean equality of punishment and equality in law suits irrespective of caste, colour and creed, and adds that this order was very offensive to the Brāhmaṇas who claimed many privileges including immunity from capital punishment.

The passage containing the words *Daṇḍasamatā* and *Vyavahārasamatā* should not be divorced from its context and interpreted as if it were an isolated ukase. We quote the passage with the context below :—

My *Rājukas* have been granted independence in the award

of honours and penalties. But as it is desirable that there should be uniformity in judicial procedure (*Vyāvahāra*), and uniformity in penalties (*Daṇḍa*), from this time forward my rule is this—"To condemned men lying in prison under sentence of death a respite of three days is granted by me."

It is clear from the extract quoted above that the order regarding *Vyavahārasamatā* and *Daṇḍasamatā* is to be understood in connection with the general policy of decentralisation which the emperor introduced. Aśoka granted independence to the *Rājukas* in the award of penalties, but he did not like that the *Daṇḍa* and *Vyavahāra* prevalent within the jurisdiction of one *Rājuka* should be entirely different from those prevailing within the jurisdiction of others.[1] He wanted to maintain some uniformity (*Samatā*) both in *Daṇḍa* (penalties) as well as in *Vyavahāra* (procedure). As an instance he refers to the rule about the granting of respite of three days to condemned men. The *Samatā* which he enforced involved a curtailment of the autonomy of the *Rājukas* and did not necessarily infringe on the alleged immunity of the Brāhmaṇas from capital punishment.

But were the Brāhmaṇas really immune from capital punishment in ancient India? The immunity was certainly not known to the Kurupañchāla Brāhmaṇas who thronged to the Court of Janaka. In the *Bṛihadāraṇyaka Upanishad* (iii. 9. 26) we have a reference to a Brāhmaṇa disputant who failed to answer a question of Yājñavalkya and lost his head. We learn from the *Pañchaviṁśa Brāhmaṇa* (Vedic Index II, p. 84) that a *purohita* might be punished with death for treachery to his master. The life of a Brāhmaṇa was not so sacrosanct in ancient as in mediaeval and modern India. We learn from the *Aitareya Brāhmaṇa* that king Hariśchandra of the Ikshvāku family did not scruple to offer a Brāhmaṇa boy as a victim in a sacrifice.

Against the surmises regarding the anti-Brāhmaṇical policy of Aśoka we have the positive evidence of some of his inscriptions which proves the emperor's solicitude for the welfare of the Brāhmaṇas. Thus in Rock Edict III he inculcates liberality to Brāhmaṇas. In Edict IV he reprobates unseemly behaviour towards Brāhmaṇas. In Edict V he refers to the employment of *Dharmamahāmātras* to promote the welfare and happiness of the Brāhmaṇas.

M.M. Śāstrî says further that as soon as the strong hand of Aśoka was removed the Brāhmaṇas seemed to have stood against his successors. We have no evidence of any such conflict between the children of Aśoka and the Brāhmaṇas. On the other hand, if the Brāhmaṇa historian of Kaśmîr is to

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[1] I am indebted for this suggestion to my colleague, Mr. S. N. Majumdār.

be believed the relations between Jalauka, one of the sons and successors of Aśoka and the Brāhmaṇical Hindus, were entirely friendly.

In conclusion Paṇḍit Śāstrî refers to the assassination of the last Maurya by Pushyamitra Śuṅga and says, "We clearly see the hands of the Brāhmaṇas in the great revolution." But the Buddhist remains at Bharhut erected "during the supremacy of the Śuṅgas" do not bear out the theory which represents Pushyamitra and his descendants as the leaders of a militant Brāhmaṇism. Are inferences deduced from uncorroborated writings of late authors, like Tāranāth, to be preferred to the clear testimony of contemporary monuments? Even admitting that Pushyamitra was a militant Brāhmaṇist, we fail to see how the dismemberment of the Maurya empire can be attributed to him or his Brāhmaṇist followers. The empire was a shrivelled and attenuated body long before the Śuṅga *coup d'état* of 185 B.C. We learn from the *Rājataraṅginî* that immediately after the death of Aśoka one of his own sons, Jalauka, made himself independent in Kaśmîr and conquered the plains as far as Kanauj. The loss of the northern provinces is confirmed by Greek evidence. We learn from Polybius that about 206 B.C. there ruled over them a king named Subhāgasena. Subhāgasena was a king and not a petty chief of the Kābul valley as Dr. Vincent Smith would have us believe. He is called "king of the Indians," a title which was applied by the classical writers only to great kings, like Chandragupta and Demetrius. He enjoyed the friendship of Antiochus, the great king of Syria. There is nothing in the account of Polybius which shows that he was vanquished by the Syrian king in war or was regarded by the latter as a subordinate ruler. On the contrary, the statement that Antiochus "renewed his friendship with Sophagasenus, king of the Indians," proves that the two monarchs met on equal terms and that the relations between them were of a friendly kind. The renewal of friendship on the part of the Greek king and the surrender of elephants on the part of his Indian brother only remind us of the relations subsisting between Chandragupta and Seleucus. Further the expression "renewal of friendship" seems to suggest that Subhāgasena had had previous dealings with Antiochus. Consequently he must have come to the throne some time before 206 B.C. The existence of an independent kingdom in the North-West before 206 B.C. shows that the Maurya empire must have begun to break up nearly a quarter of a century before the usurpation of Pushyamitra.

We have seen that the theory which ascribes the dismemberment of the Maurya empire to a Brāhmaṇical revolution led by Pushyamitra Śuṅga does not bear scrutiny. Was the Maurya disruption due primarily to the Greek invasions? The earliest Greek invasion after Aśoka, that of Antiochus, took

place about 206 B.C. and we have seen that the combined testimony of Kalhaṇa and Polybius leaves no room for doubt that the dissolution of the empire began long before the raid of the Hellenistic monarch.

What then were the primary causes of the disintegration of the mighty empire? There are good grounds for believing that the government of the outlying provinces by the Imperial officials was oppressive. Already in the time of Bindusāra ministerial oppression had goaded the people of Taxila to open rebellion. The *Divyāvadāna* says (p. 371) :—

"atha rājño Vindusārasya Takshaśilā nāma nagaraṁ viruddham. Tatra rājñā Vindusārenāśoko visarjitaḥ..yāvat kumāraś chaturaṅgena balakâyena Takshaśilâṁ gataḥ, śrutvā Takshaśilā nivāsinaḥ paurāḥ pratyudgamya cha kathayanti na vayaṁ kumārasya viruddhāḥ nāpi rājño Vindusārasya api tu dushṭāmātyā asmākaṁ paribhavaṁ kurvanti.

Now Taxila, a city of Bindusāra's, revolted. The king despatched Aśoka there.... while the prince was nearing Taxila with the fourfold army, the resident *pauras* of Taxila, on hearing of it .... came out to meet him and said :—"We are not opposed to the prince nor even to king Bindusāra. But these wicked ministers insult us."

The *Divyāvadāna* is no doubt a late work, but the reality of ministerial oppression to which it refers is affirmed by Aśoka himself in the Kaliṅga Edicts. Addressing the high officers in charge of Tosali he says : "All men are my children and just as I desire for my children that they enjoy every kind of prosperity and happiness in both this world and the next, so also I desire the same for all men. You, however, do not grasp this truth to its full extent. Some individual, perchance, pays heed, but to a part only, not the whole. See then to this, for the principle is well established. Again, it happens that some individual incurs imprisonment or other ill-usage, and when he ends in imprisonment without due cause, many other people are deeply grieved."

From the concluding words of the Kaliṅga Provincials' Edict it appears that official maladministration was not confined to the province of Kaliṅga. The state of affairs at Ujjain and Taxila was similar. It is thus clear that the loyalty of the provincials was being slowly undermined by ministerial oppression long before the Śuṅga revolution of 185 B.C. and the Greek invasion of 206 B.C. Aśoka no doubt did his best to check the evil, but he was ill served by his officers. It is significant that the provincials of the North-West—the very people who complained of the oppression of the *Dushṭāmātyas* as early as the reign of Bindusāra were the first to break away from the Maurya empire. The Magadhan successors of Aśoka had neither the strength nor perhaps the will to arrest the process of disintegration. The martial ardour of imperial

Magadha had vanished with the last cries of agony uttered in the battle-fields of Kaliṅga. Aśoka had given up the aggressive militarism of his forefathers and had evolved a policy of *Dhammavijaya* which must have seriously impaired the military efficiency of his empire. He had called upon his sons and grandsons to eschew new conquests, avoid the shedding of blood and take pleasure in patience and gentleness. It is, therefore, not at all surprising that the *rois faineants* who succeeded to the imperial throne of Pāṭaliputra proved unequal to the task of maintaining the integrity of the mighty fabric reared by the genius of Chandragupta and Chānakya.

The disintegration which set in before 206 B.C. was accelerated by the invasions led by the Yavanas referred to in the *Gārgī Saṁhitā* and the *Mahābhāshya* of Patañjali. The final *coup de grace* was given by Pushyamitra Śuṅga.

19. The Gupta Empire in the Sixth and Seventh Centuries A.D.

By Hemchandra Raychaudhuri, M.A.

Thanks to eminent scholars like Sir R. G Bhandarkar, Fleet, Smith, Allan and others the general outlines of the history of the Gupta dynasty from the time of Chandra Gupta I to that of Skanda Gupta Vikramāditya are no longer open to doubt, and trustworthy accounts of the Gupta empire from A.D. 320 to A.D: 467 are by no means a rarity. But the later Guptas have hardly received the attention they deserve.

It is now admitted by all scholars that the reign of Skanda Gupta ended about A.D. 467.[1] When he passed away the empire did not wholly perish. We have epigraphic as well as literary evidence of the continuance of the Gupta empire in the sixth and seventh centuries A.D. The Betul plates of the Parivrājaka Mahārāja Saṃkshōbha dated in the year 199 G.E. (*Śrîmati pra-varddhamāna-vijaya rājye samvatsaraśate navanavatyuttare Gupta-nṛipa-rājya-bhuktau*) i.e. 518 A.D. testify to the fact that the Gupta sway at this period was acknowledged in Ḍabhâlâ, which included the Tripurî Vishaya (Jabbalpur region),[2] and the eighteen forest kingdoms[3] (probably the eastern districts of the present Central Provinces). Another inscription of Saṁkshōbha found in the valley near the village of Khōh in the Nāgaudh state in Baghēlkhaṇḍ dated in the year 209, i.e. A.D. 528, proves that the Gupta empire included the Central Provinces even in A.D. 528.[3] Five years later the grant of a village in the Koṭivarsha Vishaya of Puṇḍravardhana bhukti "during the reign of *Paramadaivata Paramabhaṭṭāraka Mahārājādhirāja Śrî.....*Gupta"[4] shows that the Gupta empire at this period included the eastern as well as the central provinces. Towards the close of the sixth century a Gupta king, a contemporary of Prabhākaravardhana of the Pushpabhūti family of Śrîkaṇṭha (Thānēsar), was ruling in Mālwā. Two sons of this king Kumāra Gupta and Mādhava Gupta were appointed to wait upon the princes Rājyavardhana and Harsha of Thānēsar.[5] From

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[1] Smith, *The Oxford History of India*, 'Additions and Corrections,' p. 171, end.

[2] *Epigraphia Indica*, Vol. VIII, pp. 284-87.

[3] Fleet, *Corpus Inscriptionum Indicarum*, Vol. III, pp. 113-16.

[4] *Dāmodarpur plates*, edited by Prof. Rādhāgovinda Basāk. Ep. Ind., XV, p. 113.

[5] Cowell and Thomas, *Harṣa-Carita*, p. 119.

the Aphsad inscription of Ādityasēna we learn that the fame of the father of Mādhava Gupta (the associate of Harsha Deva) marked with honour of victory in war over Susthitavarman, king of Kāmarūpa was constantly sung on the banks of the river Lōhitya (Brahmaputra).[1] This indicates that even in A.D. 600 (the time of Prabhākaravardhana) the sway of the Gupta dynasty extended from Mālwā to the Brahmaputra.

In the first half of the seventh century the Gupta power was no doubt overshadowed by that of Harsha. But after the death of the great Kanauj monarch, the Gupta empire was revived by Ādityasēna, son of Mādhava Gupta who "ruled the whole earth up to the shores of the Oceans", performed the Aśvamedha and other great sacrifices,[2] and assumed the titles of *Paramabhaṭṭāraka* and *Mahārājādhirāja*.

We shall now proceed to give a brief account of the later Gupta monarchs. The immediate successor of Skanda Gupta Vikramāditya seems to have been his brother Pura Gupta. The existence of this king was unknown till the discovery of the Bhitarī Seal of Kumāra Gupta II in 1889, and its publication by Smith and Hoernle.[3] This seal describes Pura Gupta as the son of Kumāra Gupta I by the queen Ananta Devī, and does not mention Skanda Gupta. The mention of Pura Gupta immediately after Kumāra Gupta with the prefix *Tatpādānudhyāta* does not necessarily prove that Pura Gupta was the immediate successor of his father, and a contemporary and rival of his brother Skanda Gupta. In the Manahali grant Madanapāla is described as "Śrī Rāmapāla Deva Pādānudhyāta"[4] although he was preceded by his elder brother *Kumārapāla*. Dr. Smith has proved that Skanda Gupta ruled over the whole empire including the eastern and the central as well as the western provinces.[5] There is no room for a rival Mahārājādhirāja in Northern India during his reign. He was a man of mature years [6] at the time of his accession and must have been an old man at the time of his death c. A.D. 467. His brother and successor Pura Gupta, too, must have been an old man at that time. It is, therefore, not at all surprising that he had a very short reign and died some time before A.D. 473 when his grandson, Kumāra Gupta II, was ruling.[7] Pura Gupta's queen was Śrī Vatsadevī, the mother of Narasiṁha Gupta Bālāditya.

The coins of Pura Gupta have the reverse legend Śrī Vikramaḥ.[8] Allan identifies him with king Vikramāditya of

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1 Fleet, C.I.I. pp. 206-07.
2 Op. cit., pp. 212-13.
3 J.A.S.B., 1889, pp. 84-105.
4 A.K. Maitreya, *Gauḍa lekhamālā*, p. 153.
5 *The Early History of India*, 1914, pp. 309-10. 6 Op. cit., p. 309.
7 Dr. R. C. Majumdar, *The Revised Chronology of the last Gupta Emperors*, *Indian Antiquary*, 1918, p. 161 et seq.
8 Allan, *Catalogue of the coins of the Gupta Dynasties*, p. 134.

Ayodhyā, father of Bālāditya, who was a patron of Buddhism through the influence of Vasubandhu.[1] The importance of this identification lies in the fact that it proves that the successors of Skanda Gupta ruled at Ayodhyā probably till the rise of the Maukharis.

Pura Gupta was succeeded by his son, Narasiṁha Gupta Bālāditya. This king has been identified with king Bālāditya who is represented by Hiuen Tsang as having overthrown the tyrant Mihirakula.[2] It has been overlooked that Hiuen Tsang's Bālāditya was the immediate successor of Tathāgata Gupta who was himself the immediate successor of Budha Gupta,[3] whereas Narasiṁha Gupta Bālāditya was the son and successor of Pura Gupta who in his turn was the son of Kumāra Gupta I and the successor of Skanda Gupta. The son and successor of Hiuen Tsang's Bālāditya was Vajra,[4] while the son and successor of Narasiṁha was Kumāra Gupta II. It is obvious that the conqueror of Mihirakula was not the son of Pura Gupta but an altogether different individual. The existence of at least two kings of the Madhyadēśa having the *biruda* Bālāditya is proved by the Sārnāth inscription of Prakaṭāditya.[5]

Narasiṁha Gupta must have died in or about the year 473. He was succeeded by his son Kumāra Gupta II, Kramāditya by queen Mahālakshmî Devî.

Kumāra Gupta II has been identified with the king of that name mentioned in the Sārnāth Buddhist Image Inscription of the year 154 G.E. (A.D. 473–74). His reign must have terminated in or about the year 157 (A.D. 476-77), the first known date of Budha Gupta.[6] The reigns of Pura Gupta, Narasiṁha Gupta and Kumāra Gupta II appear to be abnormally short, amounting together to only ten years (A.D.467-477). This is by no means a unique case. In Vengi three Eastern Chalukya Monarchs, viz. Vijayāditya IV, his son Ammarāja I, and Ammarāja's son, another Vijayāditya, ruled only for seven years and six and a half months.[7]

For Budha Gupta, the successor of Kumāra Gupta II, Kramāditya, we have a number of dated inscriptions and coins

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1 Op. cit., pp l-li.

2 Smith, E.H.I., pp. 318, 320.

3 Fo-to-kio-to. Beal (*Si-yu-ki*, II, p. 168), Fleet (C.I.I. Introduction, 46n) and Watters (*On Yuan Chwang's Travels in India*, II, p. 164) render the term by "Buddha Gupta" a name unknown to Indian Epigraphy. The synchronism of his grandson Bālāditya with Mihirakula (Beal, "Life of Hiuen Tsiang," p. 111; Si-yu-ki, I, p. 168) proves that "Budha Gupta" is meant.

4 Watters, *Yuan Chwang*, II, p. 165.

5 Fleet, C.I.I., p. 285.

6 Majumdar, *The Revised Chronology of the Last Gupta Emperors*, Ind. Ant., 1918, p. 161 et seq.

7 Hultzsch, *South Indian Inscriptions*, Vol. I, p. 46.

which prove that he ruled for about twenty years (A.D. 477, 496). We learn from Hiuen Tsang that he was a son of Śakrāditya. The only predecessor of Budha Gupta who had that title was Kumāra Gupta I Mahendrāditya (Mahendra = Śakra). It seems probable that Budha Gupta was the youngest son of the emperor Kumāra Gupta I, and consequently a brother or half-brother of Skanda Gupta and Pura Gupta.

Two copper plate inscriptions[1] discovered in the village of Dāmodarpur in the district of Dinājpur testify to the fact that Budha Gupta's empire included Puṇḍravardhanabhukti (northern and part of eastern Bengal) which was governed by the viceroys (Uparika Mahārāja) Brahmadatta and Jayadatta. The Sārnāth Buddhist Image Inscription of the Gupta year 157 (A.D. 476-77) proves his possession of the Kāsi country. Eight years later (A.D. 484-85) the erection of a Dhvaja stambha by the Mahārāja Mātṛivishṇu, ruler of the Arikiṇa Vishaya (Eraṇ in the Sāgar District), and his brother Dhanyavishṇu while Budha Gupta was reigning and Suraśmichandra was governing the land between the Kālindī and the Narmadā,[2] indicates that Budha Gupta's dominions included Central India as well as Kāsi and Bengal.

The coins of this emperor are dated in the year 175 = A.D. 495-6.[3] They continue the types of the Gupta silver coinage ; their legend is the claim to be lord of the earth and to have won heaven, found on the coins of Kumāra Gupta I and Skanda Gupta.

According to Hiuen Tsang Budha Gupta was succeeded by Tathāgata Gupta, after whom Bālāditya succeeded to the empire.[4]

At this period the supremacy of the Guptas in Central India was challenged by the Hun king Tōramāṇa. We have seen that in A.D. 484-485 a Mahārāja named Mātṛivishṇu ruled in the Arikiṇa Vishaya as a vassal of the emperor Budha Gupta, but after his death his younger brother Dhanyavishṇu acknowledged the supremacy of Tōramāṇa.[5]

The success of the Huns in Central India was, however, short lived. In the year 191, i.e. A.D. 510-11, we find a general named Gōparāja fighting by the side of a Gupta king at Arikiṇa[6] and king Hastin of the neighbouring province of Ḍabhālā acknowledging the sovereignty of the Guptas.[7] In 199 (A.D. 518) the suzerainty of the Guptas is acknowledged in the Tripurîvishaya.[8] In the year 209 (A.D. 528-29) the Gupta

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1 Edited by Prof. Rādhāgovinda Basāk.
2 Fleet, C. I.I., p. 90.
3 Allan, *Catalogue of the Coins of the Gupta Dynasties*, p. lxii.
4 Beal, *Si-yu-ki*, II, p. 168 ; the *Life*, p. 111.
5 Fleet, C.I.I., pp. 159-161.
6 Op. cit., p. 92. 7 Op. cit., p. 107.
8 *Ephigraphia Indica*, Vol. VIII, pp. 284-287.

sway was still acknowledged by the Parivrājaka Mahārāja of Ḍabhālā.[1] The Parivrājakas Hastin and Saṃkshōbha seem to have been the bulwarks of the Gupta empire in the Central Provinces. The Harsha Charita of Bāṇa recognises the possession of Mālwā by the Guptas as late as the time of Prabhākaravardhana (A.D. 600).[2] There can be no doubt that the expulsion of the Huns from Central India was final. The recovery of the Central Provinces was probably effected by Bālāditya who is represented by Hiuen Tsang as having overthrown Mihirakula (the son and successor of Tōramāṇa) and left him the ruler of a "small kingdom in the north".[3] It is not altogether improbable that Bālāditya was a *biruda* of "the glorious Bhānu Gupta, the bravest man on the earth, a mighty king, equal to Pārtha," along with whom Goparāja went to Arikiṇa and having fought a "very famous battle" died shortly before A.D. 510-11.[4]

Mihirakula was finally subjugated by the *Janendra* Yaśodharman of Mandasōr shortly before A.D. 533.[5] Line 6 of the Mandasōr stone pillar inscription[6] leaves the impression that in the time of Yaśōdharman Mihirakula was the king of a Himālayan country ("small kingdom in the north"), i.e. Kasmîr and that neighbourhood, who was compelled "to pay respect to the two feet" of the victorious *Janendra* probably when the latter carried his arms to "the mountain of snow the table lands of which are embraced by the Gangā."

Yaśōdharman claims to have extended his sway as far as the Lauhitya (Brahmaputra) in the east.[7] It is not improbable that he defeated and killed Vajra, the son and successor of Bālāditya, and extinguished the viceregal family of the Dattas of Puṇḍravardhana. Hiuen Tsang mentions a king of Central India as the successor of Vajra.[8] The Dattas who governed Puṇḍravardhanabhukti from the time of Kumāra Gupta I to that of Budha Gupta, disappear about this time. But Yaśōdharman's success must have been short lived, because in the Gupta year 214 (A.D. 533-34), the very year of the Mandasōr inscription of Vishṇuvardhana which mentions the *Janendra* Yaśodharman as victorious, the son and viceroy of a Gupta *Paramabhaṭṭāraka Mahārājadhirāja pṛithivîpati* and not any official of the Central Indian *Janendra* was governing the Puṇḍravardhana bhukti, a province which lay between the Indian interior and the Lauhitya.

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1 Fleet, C.I.I., p. 114.
2 Cowell and Thomas, *Harṣa carita*, p. 119.
3 Beal, *Si-yu-ki*, I, p. 171.
4 Fleet, C.I.I., p. 93.
5 Op. cit., pp. 147, 153.
6 Op. cit., pp. 146-147. Cf. Jayaswal, *The Historical Position of Kalki*, p. 9.
7 Op. cit., p. 146.
8 Beal, *Si-yu-ki*, II, p. 170.

The name of the Gupta Emperor in the Dāmodarpur plate of A.D. 533-34 is unfortunately lost.

The Aphsaḍ inscription of Āditya Sēna however discloses the names of a number of Gupta kings, the fourth of whom, Kumara Gupta III, was a contemporary of Īśānavarman Maukhari who is known from the Harāhā inscription to have been ruling in A.D. 554 (V.S. 611).[1] The three predecessors of Kumāra Gupta III, namely, Kṛiṣṇa Gupta, Harsha Gupta and Jīvita Gupta should probably be placed in the period between A.D. 510 (the date of Bhānu Gupta) and A.D. 554 (the approximate date of Kumāra Gupta III). It is probable that one of these kings is identical with the Gupta emperor mentioned in the Dāmodarpur plate of A.D. 533-34. The absence of high-sounding titles like Mahārājādhirāja or Paramabhaṭṭāraka in the ślokas of the Aphsaḍ inscription does not necessarily prove that the kings mentioned there were petty chiefs. No such titles are attached to the name of Kumāra Gupta in the Mandasōr inscription of A.D. 473-74, or to the name of Budha Gupta in the Eraṇ inscription of A.D. 484-85. On the other hand even the queen of Mādhava Gupta, the subordinate ally of Harsha,[2] is called Paramabhaṭṭārikā and Mahādevî in the Dēō Baraṇārk inscription of Jîvita Gupta II.[3]

Regarding Kṛishṇa Gupta we know very little. The Aphsaḍ inscription describes him as a hero whose arm played the part of a lion, in bruising the foreheads of the array of the rutting elephants of (his) haughty enemy (and) in being victorious by (its) prowess over countless foes.[4] The "dṛiptārāti" (haughty enemy) against whom he had to fight may have been Yaśodharman.

The next king, Harsha Gupta, had to engage in "terrible contests" with those who were "averse to the abode of the goddess of fortune being with (him, her) own lord."[5] There were "wounds from many weapons" on his chest. The names of the enemies who tried to deprive him of his rightful possessions are not given.

Harsha's son, Jîvita Gupta I, probably succeeded in re-establishing the power of his family. He is described as the crest jewel of kings (Kshitîśa-Chuḍāmaṇi). "The very terrible scorching fever (of fear) left not (his) haughty foes, even though they stood on seaside shores that were cool with the flowing and ebbing currents of water, (and) were covered with the branches of plantain-trees severed by the trunks of elephants roaming through the lofty groves of palmyra palms; (or) even though they stood on (that) mountain (Himālaya)

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[1] Hirānanda Śāstrî, *Harāhā Inscription of Iśānavarman*, *Ep. Ind.*, xiv, p. 110 et seq.

[2] Fleet, *C.I.I.*, p. 204.

[3] Op. cit., p. 215.

[4] Op. cit., p. 202.

[5] Op. cit., p. 205.

which is cold with the water of the rushing and waving torrents full of snow."[1] The "haughty foes" on sea side shores were undoubtedly the Gauḍas who were already launched on a career of conquest about this time and who are described as living on the seashore (*samudrāśraya*) in the Harāhā inscription of A.D. 554.

The next king, Kumāra Gupta III, had to encounter a sea of troubles The Gauḍas[2] were issuing from their "proper realm" which was Western Bengal (as it bordered on the sea and included Karṇasuvarṇa[3] and Rāḍhāpurî[4]).

The lord of the Āndhras who had thousands of three-fold rutting elephants,[5] and the Śūlikas[6] who had an army of countless galloping horses, were powers to be reckoned with. A new power was rising in the Upper Ganges valley which was destined to engage in a death grapple with the Guptas for the mastery of Northern India. This was the Maukhari power.

The Maukharis claimed descent from the hundred sons whom king Aśvapati got from Vaivasvata[7] (Yama,[8] and not Manu). The family consisted of two distinct groups. The stone inscriptions of one group have been discovered in the Jaunpur and Bārā Bankī districts of the United Provinces, while the stone inscriptions of the other group have been discovered in the Gayā district of Bihār.[9] The Maukharis of Gayā (Yajña varman, Śārḍūlavarman and Anantavarman) were admittedly a feudatory family. Prince Śārdūla is called Sāmanta-chūḍāmaṇi in the Barābar Hill Cave Inscription of his son Anantavarman.[10]

The Maukharis of the United Provinces were also probably feudatories at first. The earliest princes of this family.

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[1] Op. cit., p. 205.

[2] 'Gauda' is possibly a Dravidian term meaning a farmer. Cf. Rice. Mysore and Coorg from the Inscriptions, p. 165. The Gauḍa upheaval of this period reminds us of the Kaivarta outbreak of the time of the later Pāla kings.

[3] M. Chakravarti, *J.A.S.B.*, 1908, p. 274.

[4] *Prabodhachandrodaya*, Act ii.

[5] *Harāhā Inscription*. The Āndhra king here mentioned was probably Mādhavavarman II of the Vishṇukuṇḍin family who "crossed the river Godāvarî with the desire to conquer the eastern region." See Jouveau-Dubreuil, Ancient History of the Deccan, p. 92.

[6] Probably the Chalukyas. In the Mahākuṭa pillar-inscription of Maṅgaleśa of A.D. 602 the name appears as 'Chalikya' (*Bomb. Gaz., Vol. I, part* II, p. 336). In the Gujarāt records we find the forms Solaki and Solaṅki, op. cit., part I, p. 156. Sūlika may be another dialectic variant. The Mahākuṭa pillar inscription tells us that Kîrtivarman I of the Chalikya dynasty gained victories over the kings of Vanga, Anga, Magadha, Madraka, etc. (op. cit., part II, p. 345).

[7] *Harāhā Inscription*.

[8] *Māhābhārata*, iii, 296. 39-41.

[9] *Epigraphia Indica*, xiv, p. 110; *Corpus Inscriptionum Indicarum* iii, pp. 221-228.

[10] Fleet, *C.I.I.*, p. 223.

namely Harivarman, Ādityavarman and Īśvaraman were simply Mahārāja̱s.[1] Ādityavarman's wife was Harsha Guptā,[1] probably a sister of king Harsha Gupta. The wife of his son and successor Īśvaravarman was also a Gupta princess named Upa Guptā.[1] Iśānavarman, son of Īśvaravarman and Upa Guptā, claims victories over the Āndhras, the Śūlikas and the Gaudas and is the first to assume the imperial title of Mahārājādhirāja. It was this which probably brought him into conflict with king Kumāra Gupta III. Thus began a duel between the Maukharis and the Guptas which ended only when the latter with the help of the Gaudas wiped out the Maukhari power in the time of Grahavarman, brother-in-law of Harsha.

We have seen that Īśānavarman's mother and grandmother were Gupta princesses. The mother of Prabhākaravardhana the other empire builder of the second half of the sixth century was also a Gupta princess.[2] It seems that the Gupta marriages in this period were as efficacious in stimulating imperial ambition as the Lichchhavi marriages of more ancient times.

Kumāra Gupta III claims to have "churned that formidable milk-ocean, the cause of the attainment of fortune, which was the army of the glorious Iśānavarman, a very moon among kings."[3] This was not an empty boast, for the Maukhari records do not claim any victory over the Guptas. Kumāra Gupta III's funeral rites took place at Prayāga (Allahabad) which must have formed a part of his dominions.[3]

The son and successor of this king was Dāmodara Gupta. He continued the struggle with the Maukharis and fell fighting against them. "Breaking up the proudly stepping array of mighty elephants, belonging to the Maukhari, which had thrown aloft in battle the troops of the Hūṇas (in order to trample them to death), he became unconscious (and expired in the fight)."[4]

Dāmodara Gupta was succeeded by his son Mahāsena Gupta. He is the king of Mālwā mentioned in the Harshacharita whose sons, Kumāra Gupta and Mādhava Gupta, were appointed to wait upon Rājyavardhana and Harshavardhana by their father, king Prabhākaravardhana of the Pushpabhūti family of Śrîkaṇṭha (the district round Thānēsar). The intimate relations between the family of Mahāsena Gupta and that of Prabhākaravardhana is proved by the Madhuban grant and the Sonpat Copper Seal Inscription[5] of Harsha which represent Mahāsena Guptā, Devî as the mother of

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[1] Op. cit., p. 220. [2] Op. cit., p. 232. [3] Op. cit., p. 206.
[4] *Epigraphia Indica.* I, p. 67 et seq.
[5] Fleet, *C.I.I.*, p. 232.

Prabhākara, and the Aphsad, inscription of Ādityasena which alludes to the desire of Mādhava Gupta, son of Mahāsēna Gupta, to "associate himself with the glorious Harshadeva."[1]

The Pushpabhūti alliance of Mahāsēna Gupta was probably due to his fear of the rising power of the Maukharis. The policy was eminently successful, and during his reign we do not hear of any struggle with that family. But a new danger threatened from the east. A strong monarchy was at this time established in Kāmarūpa by a line of princes who claimed descent from Bhagadatta. King Susthitavarman[2] of this family came into conflict with Mahāsēna Gupta and was defeated. "The mighty fame of Mahāsēna Gupta," says the Aphsad inscription, "marked with honour of victory in war over the illustrious Susthitavarman, (and) (white) as a full-blown jasmine-flower or water-lily, or as a pure necklace of pearls pounded into little bits (?) is still constantly sung on the banks of (the river) Lōhitya."[3]

Between Mahāsēna Gupta, the contemporary of Prabhākaravardhana, and his youngest son Mādhava Gupta, the contemporary of Harsha, we have to place a king named Deva Gupta II[4] who is mentioned by name in the Madhuban and Banskhera[5] inscriptions of Harsha as the most prominent among the kings "who resembled wicked horses" who were all subdued by Rājyavardhana. As the Gupta princes are uniformly connected with Mālwā in the Harshacharita there can be no doubt that the "wicked" Deva Gupta is identical with the "wicked lord of Mālwā" who cut off Grahavarman Maukhari, and who was himself defeated "with ridiculous ease" by Rājyavardhana.[6] It is difficult to determine with absolute precision the position of Deva Gupta II in the dynastic list of the Guptas. He may have been the eldest son of Mahāsena Gupta. His name is omitted in the Aphsad list, just as the name of Skanda Gupta is omitted in the Bhitarî list.[7]

Shortly before his death king Prabhākaravardhana had given his daughter Rājyaśrî in marriage to Grahavarman, the eldest son of the Maukhari king Avantivarman. The alliance of the Pushpabhūtis with the sworn enemies of his family must have alienated Deva Gupta who formed a counter-alliance with the Gaudas whose hostility towards the Maukharis dated from the reign of Iśānavarman. The Gupta king and the

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1 Op. cit., p. 207.
2 *Nidhanapur plates*, *Ep. Ind.* xii, p. 65 et seq.
3 Fleet, *C.I.I.*, p. 206.
4 The Emperor Chandra Gupta Vikramaditya was Deva Gupta I.
5 *Epigraphia Indica*, iv, p.208 et seq.
6 Cowell and Thomas, *Harsa Carita*, pp. 173-78.
7 He was probably the eldest son of Mahāsēna Gupta, and an elder brother of Kumāra Gupta and Mādhava Gupta.

Gauḍa king (Śasāṅka) made a joint attack on the Maukhari kingdom. "Grahavarman was by the wicked lord of Mālwā cut off from the living along with his noble deeds. Rājyasrî also, the princess, was confined like a brigand's wife with a pair of iron fetters kissing her feet and cast into prison at Kānyakubja." "The villain, deeming the army leaderless, purposes to invade and seize this country as well." Rājyavardhana, though he routed the Mālwā army "with ridiculous ease," was "allured to confidence by false civilities on the part of the king of Gauḍa, and then weaponless, confiding and alone despatched in his own quarters."[1]

To meet the formidable league between the Guptas and the Gauḍas, Harsha, the successor of Rājyavardhana, concluded an alliance with Bhāskaravarman, king of Kāmarūpa, whose father Susthitavarman had fought against the predecessor of Deva Gupta. This alliance was disastrous for the Gauḍas as we know from the Nidhanapur plate of Bhāskara.[2] The Gauḍa people, however, did not tamely acquiesce in the loss of their independence. They became a thorn in the side of Kanauj and Kāmarūpa and their hostility towards those two powers was inherited by the Pāla and Sēna successors of Śasāṅka.

During the long reign of Harsha. Mādhava Gupta, the successor of Deva Gupta, remained a subordinate ally of Kanauj. After Harsha's death the Gupta empire was revived by Ādityasena, a prince of remarkable vigour and ability who found his opportunity in the commotion which followed the usurpation of Harsha's throne by Arjuna. For this king we have a number of inscriptions which prove that he ruled over a wide territory extending to the shores of the oceans. The Aphsaḍ, Shāhpur, and Mandār inscriptions[3] recognise his undisputed possession of south and east Bihār. Another inscription[4] describes him as the ruler of the whole earth up to the shores of the oceans, and the performer of the Aśvamedha and the other great sacrifices. The titles of Paramabhaṭṭāraka and Mahārājādhirāja applied to him in the Mandāra inscription indicate that he had raised himself to the position of a paramount sovereign. We learn from the Shāhpur Stone Image inscription that he was ruling in the year A.D. 672-73. It is not improbable that he or his son and successor Deva Gupta III is the Sakalottarāpatheśvara who was defeated by the Chalukya kings Vinayāditya (A.D. 680 to A.D. 696)[5] and Vijayāditya.

[1] Cowell and Thomas, *Harṣa carita*, pp. 173-78.

[2] At the time of the issuing of the plates Bhāskaravarman was in possession of Karṇasuvarṇa, the capital of the Gauḍa king Śaśāṅka.

[3] Fleet, *C.I.I.* pp. 202-12. [4] Op. cit., p. 213 n.

[5] *Kendūr plates* of Kirtivarman II, *Ep. Ind.*, ix, p. 202. *Bomb. Gaz.*, Vol. I, part II, pp. 189, 368, 371.

We learn from the Dēō-Baraṇārk inscription[1] that Ādityasēna was succeeded by his son Deva Gupta (III) who in his turn was succeeded by his son Vishṇu Gupta who is probably identical with Vishṇu Gupta Chandrāditya[2] of the coins. The last king was Jîvita Gupta II. All these kings continued to assume imperial titles. That these titles were not empty forms appears from the records of the Western Chalukyas of Vātāpi which testify to the existence of a Pan-North Indian empire in the last quarter of the seventh century A.D. The only North-Indian sovereigns who laid claim to the imperial dignity during this period were Ādityasēna and his successors.

The Gupta empire was probably finally destroyed by the Gauḍas who could never forgive Mādhava Gupta's desertion of their cause. In the time of Yaśovarman of Kanauj, i.e. in the first half of the eighth century A.D., a Gauḍa king occupied the throne of Magadha.[3]

Petty Gupta dynasties, apparently connected with the imperial line, ruled in the Kanarese districts during the twelfth and the thirteenth centuries, and are frequently mentioned in inscriptions.[4] Evidence of an earlier connection of the Guptas with the Kanarese country is furnished by the Tālagund inscription[5] which says that Kākusthavarman of the Kadamba dynasty gave his daughters in marriage to the Guptas and other kings. In the sixth century A.D. the Vākāṭaka king Harishēṇa, a descendant of Chandra Gupta II through his daughter Prabhāvatî Guptā is said to have effected conquests in Kuntala[6]. Curiously enough the Gutta or Gupta chiefs of the Kanarese country claimed descent from Chandra Gupta Vikramāditya,[7] 'lord of Ujjayanì.'

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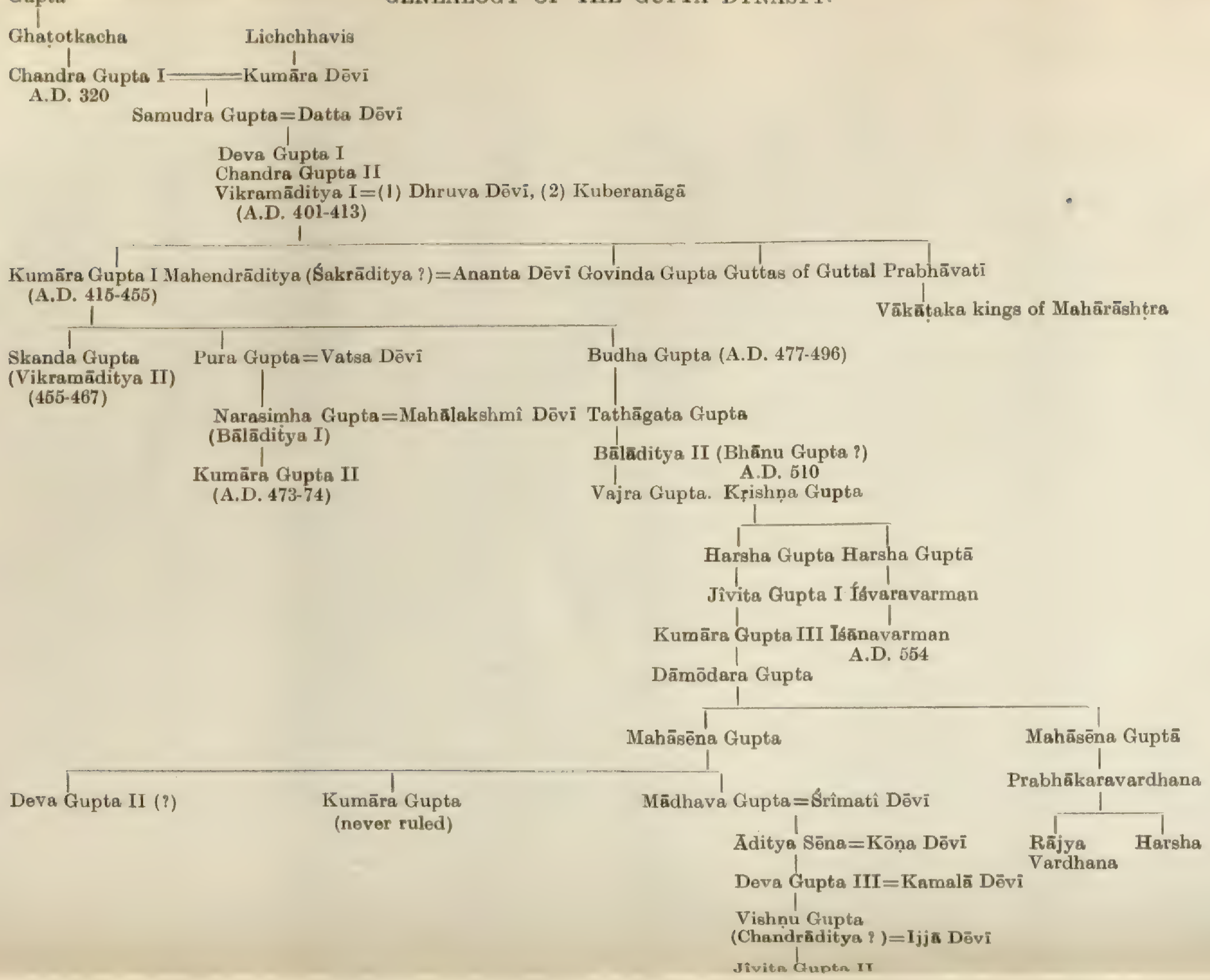
1 Fleet, *C.I.I.*, pp. 215-16.
2 Allan, *Catalogue of the coins of the Gupta Dynasties*, p. 145.
3 *Gauḍavaho* by Vākpatirāja.
4 *Bomb. Gaz.*, Vol. I, part II, pp. 578-84.
5 *Epigraphia Indica*, viii, p. 24 et seq.
6 Jouveau-Dubreuil, *Ancient History of the Dekkan*, p. 76.
7 *Bomb. Gaz.*, Vol. I, part II, pp. 578-80. Sir R. G. Bhandarkar, "*A peep into the Early History of India*," p. 60. I owe this reference to Prof. Bhandarkar.

GENEALOGY OF THE GUPTA DYNASTY.



A.D.

320. Chandra Gupta I acc ; epoch of the Gupta era.

c. 350. Samudra Gupta.

401-13. Chandra Gupta II, (Deva Gupta I, Vikramāditya I).

415-55. Kumara Gupta I, Mahendrāditya (Sakrāditya ?)

455-67. Skanda Gupta, Vikramāditya II, Kramāditya I.
Pura Gupta, Vikramāditya III, king of Ayodhyā.
Narasiṁha Gupta, Bālāditya I.

473. Kumāra Gupta II, Kramāditya II.

473-74. Restoration of the Solar Temple at Mandasōr by a guild of silk weavers.

475-510. Hastin, Mahārāja of Ḍabhālā, a feudatory of the Guptas.

477-96. Budha Gupta.
Tōramāṇa and Mihirakula in Central India.

510. Bhānu Gupta and Goparāja fought a battle at Eran.
Expulsion of Mihirakula from Central India by Bālāditya II, grandson of Budha Gupta.

518-28. Saṁkshobha, Mahārāja of Ḍabhālā (including Tripurî), a feudatory of the Guptas.

c. 533-34. Yaśodharman reduces Mihirakula to the position of a vassal.

533-34. A Gupta Emperor (Kṛishṇa, or Harsha or Jîvita Gupta I ?) recognized as overlord by the princely viceroy of Puṇḍravardhana bhukti and the vishayapati of Kōṭivarsha.

The rise of the Gauḍas.

554. Rise of Iśānavarman, his victories over the Gauḍas, Āndhras and the Śulikas (= Chalikyas or Chalukyas or Solaṅkis ?).
Kumāra Gupta III's and Dāmodara Gupta's struggles with the Maukharis.

600. Mahāsēna Gupta, king of Mālwā, and Magadha, conqueror of Susthitavarman, king of Kāmarūpa

605. Deva Gupta II, the antagonist of Rājyavardhana.
Mādhava Gupta, an ally of the emperor Harsha (606-47).

673. Ādityasēna revives the Gupta empire.

c. 690. Invasion of Northen India by the Chalukya king Vinayāditya
Deva Gupta III.
Vishṇu Gupta (Chandrāditya ?)

Jîvita Gupta II.
Gauḍa conquest of Magadha.

731. Yaśovarman, emperor of Kanauj, conqueror of the Gauḍa king of Magadha.

20. Cinna Inscription of the reign of Śrī-Yajña Sātakarṇi.

By N. G. Majumdar, M.A., *Calcutta University.*

With Plate XVI.

The stone which bears this inscription was found some thirty years ago in a village called Cinna in the Kistna District of the Madras Presidency. It is now deposited in the Madras Museum. The inscription has already been edited by the late Professor Bühler in the *Epigraphia Indica;* Vol. I, pp. 95-96, and entered as No. 1340 in Professor Lüders' *List of Brāhmī Inscriptions*, *Ibid.*, Vol. X, Appendix.[1] I now re-edit it from three excellent ink-impressions, one furnished by Mr. Ramā-prasād Chanda of the Calcutta University, and the other two received from Mr. G. Venkoba Rao, Assistant Archæological Superintendent for Epigraphy, through Professor D. R. Bhandarkar. The accompanying facsimile is published here for the first time.

The inscription is on a fragment of a stone pillar, and measures about $1'9\frac{1}{2}'' \times 1'6\frac{5}{8}''$. It consists of 6 lines of unequal length, and they are, as Bühler observes, all "mutilated, the lower ones more than the upper ones." The size of the letters is between 4″ and $\frac{3}{8}''$. The **characters** represent the type called by Bühler 'the precursor of the Southern alphabet,'[2] and are akin to those in the Banavāsi inscription of Viṇhukaḍa Cuṭukulānaṁda.[3] With regard to the individual form of letters, we may note the following: the downward flourish is to be found in the letters *a*, *k*, *ñ*, *r*, the medial *u* when added to letters which are without an opening at the bottom (e.g. in *Gotamiputasa*, ll. 1-2, and *puvāya*, l. 4), and also in the numerical symbol for 7, l. 3; the medial *i* is ornamental and written in at least four ways (e.g. in *sidhaṁ*, l. 1, *siri*, l. 1, and *Sātakaṇi*, l. 2); the medial *u* is denoted by a curve turned to the right when the letter is opened at the bottom (in *catuthaṁ*, l. 3); the letter *e* almost resembles a *v* of this inscription; *th* has a line connecting the centre with the circumference (in *catuthaṁ*, l. 3); *n* has a curved base (e.g. in *yājinā*, l. 5) as in Kuṣana inscriptions; and the *y* as well as all other letters have their verticals equalized. The characters include the **numerical symbols** for 4, 5, 7 and 20.— The **language** is a form of Prākṛit, the same as in the Cave

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[1] See also Prof. Rapson, *Catalogue of the Coins of the Andhra Dynasty, etc.*, Intro., p. LII, No. 20.

[2] *Ind. Pal.* (trans.), p. 41.

[3] *Ind. Ant.*, Vol. XIV, p. 332 & pl.

inscriptions and calls for no special remarks. In respect of **orthography**, the only point to be noted is the substitution of other nasals by the *anusvāra*, in *Hemaṁta*, l. 3, and also in *mahādaṁ* [*ḍanāyaka**], l. 5, provided my restoration is correct.

The inscription refers itself to reign of the *rājan*, *araka*, **Gautamīputra Śrī-Yajña Sātakarṇi** of the Sātavāhana dynasty and is dated (in words as well as figures) in his 27th regnal year, the 4th fortnight of the winter and the 5th day. The object of the epigraph was apparently to record some meritorious work performed by the *mahattaraka* of the king, and the *mahādaṁḍanāyaka*, whose names are unfortunately lost.

The record, as it is now read, supplies the earliest epigraphic testimony of the prevalence of the Vāsudeva cult in the Madras Presidency. No doubt can be entertained that by the 2nd century of the Christian era the cult had spread as far south as the Kistna District.

Text.

1 Sidhaṁ [|*] Na[mo] Bhagavato Vā[sude]va[sa][1] [|*] Raño **Gotami-**
2 **putasa araka-Siriyaña-Sātakaṇisa vasasatāya saṁvachara-sata [vi].**
3 **saṁ[2] 20 7 Hemaṁtānaṁ[3] pakhaṁ catutthaṁ 4 di....**
maṁ[4] 5 etīya[5]
4 puvāya araka-mahatarakena mahā[s*]e[6] .....
5 yājinā mahādaṁ[7].....
6 dhāya[8].....

Remarks.

[1] This word was left unread by Bühler. But the above reading is certain. The triangular shape of the first letter indicates that it can only be a *v*; the third letter is apparently *de*, and those that follow, as Bühler also has stated, are to be read as *vasa*. Under these circumstances, *vāsudevasa* would, in my opinion, be the only reading possible. [2] Bühler reads *saṁvachara sata*(*vi*) *maṁ* 20 7. Apparently, he would restore it as *saṁvachara sata*[*vi*][*sa**]*maṁ* 20 7. But the letter before the numeral sign for 20 is clearly *saṁ*. Therefore, the lost letter can only be *se*. I may further note by the way that the letter after *sata* may be restored also as *vī* instead of *vi* on the analogy of, for instance, *ekunavīse* which occurs in the Nāsik cave inscription No. 2, *Ep. Ind.*, Vol. VIII, p. 60. The letter *ta* is damaged. [3] Bühler reads *Hematānaṁ*. [4] Restore with Bühler *di*[*vasaṁ paṁcamaṁ*]. [5] Bühler reads *etiya*, but the superscript *ī* seems to be clear. [6] Probably *mahā* [*senāpatinā**] has to be restored. How many letters are lost after *mahā* is not certain. [7] Probably *mahādaṁ*[*ḍanāyakena**] has to be

restored. Here too how many letters are lost after *mahādaṁ* is not certain. [3] The portion after *dhāya* is completely broken away and lost.

Translation.

Success! Adoration to the *bhagavat* Vāsudeva! **On the fifth—5th—day of the fourth 4th—fortnight of winter, in the twenty-seventh—27th—year,** during the existence of the dynasty of the king, the lord **Siriyaña-Sātakaṇi, son of Gotami**—on this (day), by the lord's chamberlain, the great .....the sacrificer and the great general.....

Notes.

Bühler writes, "If the syllables *dhāya* at the beginning of l. 6 are the remnant of *Budhāya* it may have been the record of some Buddhistic donation or dedication."—*Ep. Ind.*, Vol. I, p. 96. But the invocation with which the inscription opens proves beyond all doubt that it is a Vaishnavite and not a Buddhistic record.

I cannot agree with Bühler [1] and Lüders [2] in taking *araka* which is a title of the king as an equivalent of *aryaka*, i.e. 'lord,' though I admit that here it serves the same purpose and connotes the same sense as the word *svāmin* by which he is qualified in his Nāsik cave inscription.[3] In the first place, it is extremely doubtful whether *araka* could be derived from *aryaka*, as Professor Bhandarkar has also perceived.[4] In the Kanheri cave inscriptions, which are not far removed in date from the present inscription, we have the form *ayyaka* [5] and the other derivatives of the word *arya* familiar to us from early epigraphs [6] are *aïra*, *aira*, *ayā*, *ayikā* and *āyā*. And secondly, even if the derivation were possible the addition of the suffix *ka* to *arya* could not be explained. The origin of the word *araka* is therefore uncertain. But it is just possible that it is some Dravidian title having a sense similar to that of the word *svāmin*. In this connection I may note that the grouping *Gotamiputasa araka-Siriyaña-Sātakaṇisa* was altered into *Gotamiputa-saüraka*, etc., by Professor Bhandarkar.[7] Over and above his objection, that *araka* as a Prākṛit equivalent of *aryaka* was not possible, to which reference has already been made, he further contended that *saüraka* was the same as *kṣahara*, which according to him was to be read on a Besnagar coin of Śrī-Yajña Sātakarṇi, and *kṣa-a-ru*, which he proposed to read on a Sopāra coin of the same king, against *ku-a-ru* of Pandit Bhag-

1 *Ep. Ind.*, Vol. I, p. 96, n. 8.
2 *List of Brāhmī Inscrs.*, p. 160, No. 1340.
3 *Ep. Ind.*, Vol. VIII, p. 67.
4 *Annual Rep., Arch. Surv Ind.*, 1913-14, pp. 213–14.
5 *List of Brāhmī Inscrs.*, Nos. 1001-2.
6 *Ibid.*, p. 214.
7 *Loc. cit.*

wanlal Indraji and *Sa-Hiru* of Professor Rapson. But the reading *araku* in line 2 of our record cannot in any way be avoided. For it occurs once more in line 4 where at any rate a different grouping like the one proposed is not possible. I have therefore no hesitation in looking upon Bühler's grouping of the letters as more reasonable.

The most perplexing word of the inscription is *vasasatāya* which has been differently interpreted by Bhagwanlal,[1] Bühler[2] and Fleet.[3] In epigraphic literature it occurs only once again in the Banavāsi inscription of Viṇhukaḍa Cuṭukulānaṁda; but this in no way helps us in ascertaining its true meaning. According to Bhagwanlal, *vasasatāya* is an equivalent of *varṣaśatyām*, meaning 'in the century of years.' The date would be in his opinion in accordance with the calculation of an era with hundreds omitted. But Bühler has shown that the change of *varṣaśatyām* to *vasasatāya* is not philologically possible, and moreover the assumption of an era of omitted hundreds has no value. What he himself proposes is that *vasasatāya* should be taken as corresponding to *vaśasattā-yāḥ* which means 'during the existence of the power (of).' Fleet, on the other hand, in his note on the Banavāsi inscription, contends that "the word *vasasatāya* evidently represents, not *vaśattāyāḥ* as has been supposed, but *varsha-sattāyāḥ*. It means 'of the year—existence' that is 'of the continuance for one year more.' And the record thus marks the specified day of the act registered in it, the first day of the seventh fortnight of the season Hemanta, as the accession-day or the coronation-day of Hāritiputa-Sātakaṇṇi." "Similarly by the same expression," he contends, "the inscription from China in the Kistna District, Madras (EI, I, 96), marks the fifth day of the fourth fortnight of Hemanta as either the accession-day or the coronation-day of Siri-Yaña-Sātakaṇi." (*J.R.A.S.*, 1905, pp. 304–5). But this interpretation again can hardly be regarded as satisfactory That the given date is the 'accession' or 'coronation' day of the king and that the two records are dated on the 12th and 27th coronation days respectively, do not as a matter of fact follow from the passage in question, and is therefore open to objection. Bühler's interpretation is less unnatural, though I am afraid the use of *vaśa* in the sense of 'sovereign power' will not be easily accepted by scholars. In view of these difficulties I propose to take *vasasatāya* as corresponding to *vaṁśa-satīāyām* which means 'during the existence, (i.e. the rule) of the family or dynasty,' and *Siriyaña-Sātakaṇisa vasasatāya* may therefore signify 'during the rule of the family of Srī-Yajña-Sātakarṇi.' This new interpretation I offer with some hesitation, but none better suggests itself to me.

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1 *Inscr. Cave-temp. of W. Ind.*, p. 100.
2 *Loc. cit.* 3 *J.R.A.S.*, 1905, pp. 304-5.

Cinna Inscription of Śrī-Yajña Śātakarṇi.

21. Notes on some Edicts of Aśoka.

By Harit Krishna Deb.

Rock Edict VI.

As is well known, the purport of this inscription is to emphasise Aśoka's readiness to do work conducive to the people's welfare almost at any time and place It quotes the king's order directing the Reporters to report to him on such work even when he is eating or taking a stroll in his garden or lounging in his inner apartments, etc. The concluding portion of the order runs as follows at Girnār:—

ya ca kiñci mukhato āñapayāmi svayaṁ dāpakaṁ vā srāvāpakaṁ vā ya vā puna mahāmātresu ācāyikaṁ āropitaṁ bhavati tāya athāya vivādo nijhatī va saṁto parisāyaṁ ānaṁtaraṁ paṭivedetavyaṁ me sarvatra sarve kāle.

Now, how should we understand *dāpakaṁ* and *srāvāpakaṁ* ? It might seem reasonable at first sight to take these expressions as agreeing with *ya*(*ṁ*), and the construction seems to fit in with the idea that a *dāpaka* order is to be distinguished from a *svamukhājñā*; the latter standing for the king's order received directly from his own mouth, the former involving the employment of an intermediary called *dūtaka* in later inscriptions. And a parallel explanation for *srāvāpaka* could be framed in view of the statement *eta ca sarva srāvita* occurring at the close of one of Ushavadāta's Nāsik grants (l. 4 of Inscr. No. 12, Epig. Ind. VIII, p. 82). But it is preferable to hold that *dāpaka* and *srāvāpaka* (or *srāvaka*) were designations of officers entrusted by Aśoka with the task, respectively, of collecting contributions and of preaching sermons. In his Pillar Edict VII we are told that many superior officers (*bahukā mukhā*) were engaged in persuading princes and princesses to make 'gifts and donations' (*dāna* and *visarga*) towards the furtherance of the cause of *dharma*. These could properly be called *dāpakas*.[1] In the same Pillar Edict we read that the king caused "religious" sermons to be preached (*dhaṁmasāranāni sāvāpitāni*). The officers employed for this purpose would be best described as *srāvāpakas* or *srāvākas*.[2] The general sense of the passage.

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[1] The word *dāpaka* occurs in the Arthaśāstra of Kauṭilya in the sense of a person causing payment. See the text of the 1919 ed. of the Arthaśāstra, p. 64.

[2] One wonders if *srāvaka* is used here in the special sense attached to the term in Buddhist literature.

according to this interpretation, would be: "And in respect of whatever oral order I may personally issue to a *dāpaka* or to a *srāvāpaka* or, again, of whatever urgent work may be entrusted to the *mahāmātras* . . . , whenever there occurs in the *parisad* a dispute (*vivādo*) or a profound deliberation (*nijhatī*), report should forthwith be made to me at all times and in all places." Texts of oral orders in general were, as the commentary on the Kauṭilīya Arthaśāstra informs us,[1] "peculiarly liable to misrepresentation owing to misunderstanding, carelessness, and want of intelligence of the messengers." Hence a *vivādo* or dispute might arise in the parisad in connexion with Aśoka's oral orders to dāpakas and srāvakas. *Nijhatī*, a word found again in P.E. VII, has been rightly connected with root *dhyai*, and may be explained as "profound deliberation." Urgent work necessarily required to be performed with despatch, and Aśoka did not like much profound deliberation to be wasted on such work by the parisad. It should be noted that Aśoka promises to listen, *at all times and in all places* (*sarvatra sarve kāle*), to reports concerning orders issued to the *dāpaka* and to the *srāvaka* as well as to those regarding urgent work entrusted to *mahāmātras*, whereas he defines limitations to easy access on less important business. This was obviously a practical necessity: he could not agree to be ready, always and everywhere, to receive reports relating to trivial concerns. I may add that the proposed interpretations of the terms *dāpaka* and *srāvaka* or *srāvāpaka* give to this particular Edict a technical religious import such as is perceptible throughout the entire series and is indeed expressly acknowledged towards the close of that Edict itself in the word 'dhammalipi.'

It is probable also that by the term *mahāmātra* used in this Edict we are to understand *dharma-mahāmātras*. For, in the first place, as I have pointed out elsewhere,[2] "a close examination of the 14 Rock Edicts makes it clear that the entire inscription constitutes a single, coherent pronouncement in which sequence of sense is more perceptible than sequence of time"; so that the *mahāmātras* mentioned in R.E. VI could well be identical with that special class of *mahāmātras*, called *dharma-mahāmātras*, who are described in the preceding Edict. Secondly, as indicated in that Edict, one of the duties of the *dharma-mahāmātras* coincided with the duty of the *dāpakas*, namely, that of attracting gifts. It would be natural, therefore, on the part of Aśoka to speak, in the order quoted in R.E. VI, of both classes of officers together. Thirdly, if the functions of the dāpakas and the śrāvakas related to *dharma*, the mahāmātras men-

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[1] Transl. Shāmaśāstry, p. 80.
[2] *Aśoka's Dhammalipis* (Calcutta, May, 1919), p. 4.

tioned along with them may justly be regarded to have performed cognate functions. Fourthly, the present Edict recalls the concluding portion of Kauṭilya's chapter on the Royal Routine (राजप्रणिधि) wherein [1] the value of effort (*utthāna*) in relation to work (*artha*) is emphasized in a manner very similar to the manner adopted in the Aśokan Edict. The Edict begins with an allusion to the comparative inaccessibility of former monarchs. Kauṭilya also had, in the chapter under consideration, deprecated inaccessibility on the part of the monarch with reference to work done at the *upasthāna* or 'Sanctuary,' observing that the king should attend in turn to work connected with gods, sacred places the aged, the infirm, etc.. either according to the heaviness of each of the items or according to emergency. All urgent work (*ātyayikaṁ kāryaṁ*), Kauṭilya (*ātyayika-vaśena*) adds, should be attended to without procrastination. It will be observed that these remarks are applied by Kauṭilya to work of a specially sacred character attended to by the king in the *upasthāna*. There being a close parallelism, in idea as well as in phraseology, between these Kauṭilyan utterances and Aśoka's Rock Edict VI, we may reasonably infer that the urgent (*ācāyika*) work referred to in the Edict is of the same variety as the urgent (*ātyayika*) work of a sacred character, which Kauṭilya recommended to the immediate and earnest attention of his king. It follows that the mahāmātras referred to by Aśoka as being engaged in that kind of urgent work were not ordinary mahāmātras but dharmamahāmātras. It is true that Aśoka, in his proclamations, characteristically distinguishes between *lipi* and *dhaṁmalipi*, *anusathi* and *dhaṁmanusathi*, *dāna* and *dhaṁmadāna*, *maṁgala* and *dhaṁmamaṁgala*, *vijaya* and *dhaṁmavijaya*; so that he might be presumed to have observed a similar distinction between ordinary mahāmātras and dharmamahāmātras. The fact, therefore, that the word in the present Edict is not *dharmamahāmātra* but simply *mahāmātra* would seem to controvert that distinction. But in P.E. VII Aśoka, after telling us something about his dharmahāmātras, says :—

paṭivisiṭham paṭivisiṭham tesu tesu te te mahāmāṭā.

Clearly, therefore, the dharmamahāmātras could be referred to simply as mahāmātras if, in the context, they had received their fuller designation. Now R.E. V describes these officers, giving them their full designation, dharmamahāmātra In R.E. VI, therefore, they could, without violence to the Aśokan custom, be spoken of simply as mahāmātras. It is

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[1] As was remarked by Prof. D. R. Bhandarkar in course of his University lectures on Aśoka's Rock Edicts.

worth noting also that some duties of Aśoka's dharmamahāmātras, as detailed in his R.E.V., correspond to items of work looked after by the king in the upasthāna in the days of Chāṇakya, as referred to above.

How, then, does R.E. VI represent Aśoka to have inaugurated an advance on the religious constitution as portrayed by Kauṭilya? Kauṭilya saw, probably from experience, that in attending to work of a sacred aspect, the king must not make himself difficult of access; for inaccessibility implies dependence on officers whose errors in judging between right and wrong must inevitably be imported into the judgment pronounced by the king who thus renders himself liable to be misunderstood. Kauṭilya's solution is that the king should personally look after these concerns, sometimes in consultation with experts, at a particular hour of the day and in a particular place called the *upasthāna*. Aśoka proclaimed that he was almost ideally accessible, but not, it seems, directly to the people (which was impracticable). He permitted *paṭivedakas* or Reporters to submit their reports to him even when he was in his inner apartments, thus endeavouring to relax the limitations of time and place contemplated by Kauṭilya. But he departed from the centralizing policy of Kauṭilya by delegating to the *dharmamahāmātras* the function of attending, in the first instance, to some affairs having a religious complexion, reserving to himself the right to pronounce the final verdict under special circumstances. This arrangement was probably necessitated by his undertaking an active religious propaganda which could not be carried on by himself alone. The way in which the *mahāmātras* are alluded to as "being entrusted with urgent work" suggests the possibility that they did not, like the *dāpakas* and the *śrāvakas*, receive oral orders directly from the King and may have normally enjoyed a certain amount of freedom in the discharge of their functions. Nevertheless, the *pariṣad* deliberated upon urgent work assigned to them and even discussed the King's own oral orders to *dāpakas* and *śrāvakas*.

This leads us to consider the constitution of the *pariṣad* itself. According to one view, the constitution was the same as that of the *mantri-pariṣad* mentioned by Kauṭilya. Just as Kauṭilya lays down the rule that in *ātyayika* matters the King should summon the *mantriparisad*, so we find Aśoka speaking of the *pariṣad* in connexion with *ātyayika* work entrusted to the *mahāmātras*. The analogy is tempting, but insufficient. In a *dhaṁmalipi* Aśoka could hardly, as assumed in the proposed identification, quote orders relating to purely administrative work, entirely unconnected with *dhaṁma*, such as could be made the subject of discussion by the *mantri-pariṣad*. The real nature of the work before the *pariṣad* as alluded to in R.E. VI being now known, the *pariṣad* must be deemed to

have had definitely religious associations. This was also the case with the *pariṣad* spoken of in R.E. II. Therein Aśoka says: "The *pariṣad* also will issue orders to *yuktas* in the matter of consideration (*gaṇanāyaṁ* or *gaṇanasi*) according to the letter as well as according to the spirit [of the *dhaṁmanusathi*]." Aśoka, in the 13th year of his reign, ordered his *yuktas*, *rajjukas* and *prādeśikas* to go out on tour every five years for the purpose of preaching a *dhaṁmanusathi* in addition to performing their usual duties. To make this order really effective a certain amount of discretion had to be exercised; it would not do to preach the same *dhaṁmanusathi* without variations, in every locality, day after day, or year after year, without any consideration for varying circumstances. In the case of the *yuktas* or ordinary officers the exercise of this discretion or consideration was left to the *pariṣad* since, apparently, if it were granted to the officers themselves, they might take advantage of their privilege and neglect their work. The *rajjukas* and the *prādeśikas*, however, who were high-grade officers, were not thus subordinated to the *pariṣad* in this work of preaching, presumably because they were men of proved capacity. Now, here also, we find the *pariṣad* mentioned in connexion with matters of *dhaṁma*, as in R.E. VI; and nowhere else does Aśoka allude to the *pariṣad*. It does not appear probable, therefore, that his *pariṣad* was of the same kind as the *mantri-pariṣad* of Kauṭilya: it seems to have had closer affinities with the *pariṣad* described in Brahmanical Dharmaśāstras, *e.g.* Manu, XII, 110–12.[1] Literary evidence condones this inference. "Pariṣad," write Messrs. Macdonnell and Keith,[2] "(lit. 'sitting around') denotes in the Upaniṣads an 'assemblage' of advisers in questions of philosophy . . . . In the later literature the word denotes a body of advisers on religious topics, but also the assessors of a judge, or the council of ministers of a prince." The evolution of meaning from 'an assemblage of advisers in questions of philosophy' to 'the council of ministers of a prince' must have been through the meaning 'a body of advisers on religious topics'; and this intermediate connotation suits alike the period of Aśoka and the context of his Edicts with the reference to the word *pariṣad*. The very fact that Kauṭilya uses the term *mantri-pariṣad*, and not the simpler term *pariṣad*, to denote 'the council of ministers' indicates that in his time the word *pariṣad*, by itself, had not yet come to mean 'the council of ministers of a prince.' Aśoka, therefore, would almost certainly have used the term *mantri-pariṣad* instead of the term *pariṣad* if it were his intention to allude to that administrative body. Finally, we must bear in mind that,

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[1] Cf. Lüders, *Sitz Preus Ak Wis* 1914, pp. 834-6.
[2] *Vedic Index*, S.V. 'Pariṣād.'

in interpreting a *dhammalipi*, the application which the word *parisad* has in the Dharmaśāstras is to be preferred to the application it may have in the Arthaśāstras.

Pillar Edict V.

This Edict amplifies the statement made in Pillar Edict II, namely, *dupadacatupadesu pakhibālicalesu vividhe me anugahe kaṭe āpānadakhināye.* A list is given here of the various animals accorded various kinds of protection when Piyadasi was anointed 26 years. The closing sentence of the Edict is :—

yāva saḍuvisativasābhisitena me etāye aṁtalikāye paṁnavisatibaṁdhanamokhāni kaṭāni.

It does not appear to have been pointed out as yet in this connexion that there is a couplet in the Arthaśāstra of Kauṭilya enumerating the occasions upon which the king should effect *bandhanmoksas* :—

अपूर्वदेशाधिगमे युवराजाभिषेचने ।
पुत्रजन्मनि वा मोक्षो बन्धनस्य विधीयते ॥

[कौटिलीयं अर्थशास्त्रम्, p. 147 of the 1919 edition]

This *vidhāna*, however, does not seem fully to account for the 25 *bandhanamokṣas* which Aśoka claims to his credit in his 26th or 27th regnal year. In fact, if he had merely conformed to the Kauṭilyan *vidhāna*, he would hardly have spoken of such conformity in illustration of his *anugrahas*. His exceedingly humanitarian tendency probably led him to find out many more opportunities of *bandhanamokṣa* than those mentioned in his grandfather's Code. He is evidently emphasizing the comparatively large number of releases by which he had signalized his reign. The point of his pride is to be seen in the expression *etāye aṁtalikāye*, i.e. "in this *short* interval."[1] Elsewhere, when referring to a considerable interval, his Edicts are found to use the word *aṁtala* or *aṁtara*, so that the word *aṁtalikā* must have been deliberately employed here to denote a small period of time.

Pillar Edict VI.

This Edict, which is the last of the series engraved in the year 26 (current or elapsed) of Piyadasi's reign, begins with the statement that he had caused *dhaṁmalipis* to be engraved when he had been anointed 12 years. It then proceeds to say.

se taṁ apahaṭa taṁ taṁ dhaṁmavaḍhi pāpova hevaṁ lokasa hitasukheti paṭivekhāmi.

The word *pāpova* has been explained by Bühler as equivalent to Skt. *prāpnuyāt*. But this is phonetically inadmissible.

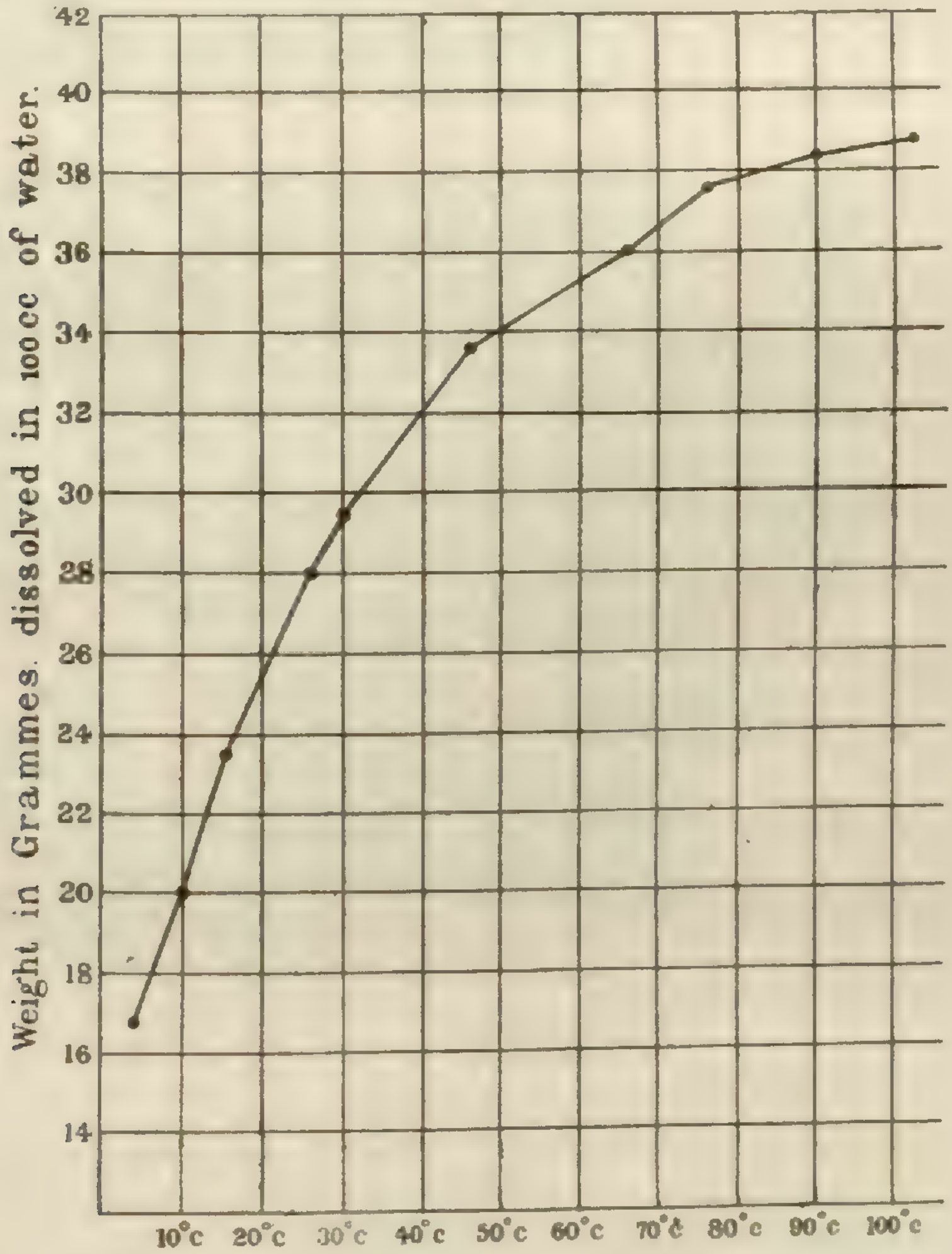
The *nu* which 'comes' to conjugated forms of $\sqrt{(pr)\bar{a}p}$ is never elided in Pāli, and such elision is never met with in Aśokan records; in the second "Separate Edict" at Dhauli and Jaugaḍa we actually get *pāpuneyu* and *pāpunevū* for Skt. *prāpnuyuḥ*. The proper Sanskrit restoration for *pāpova* would seem to be *prāpūryāt*, a benedictive form of *kryādi*$\sqrt{\text{पॄ}}$ preceded by *pra* + *ā*. The variant reading *pipova*, explained away by Bühler as an engraver's error for *pāpova*, should likewise be restored to Skt. *pipūryāt*, a potential form of *juhotyādi*$\sqrt{\text{पॄ}}$. Root पॄ in both classes has the same meanings, *pūraṇa* and *pālana*, and the benedictive is but a modification of the potential: so that the root, in either class and in either tense, might be used to denote the idea Aśoka sought to express here.

[1] The point was brought home to my mind by my friend Kumar Sudhindra Chandra Sinhasarma.

22. Preparation of Urea-antimonyl tartrate, a new Compound.

By U. N. Brahmachari, M.A., M.D., Ph.D.

When excess of solid urea is added to a very concentrated aqueous solution of hyper-acid-antimonyl tartrate and the mixture concentrated by heating on the water bath and then alcohol added to the mixture, crops of crystals are obtained which are prismatic in structure. These crystals are soluble in water and only very sparingly soluble in alcohol. They are best purified by being repeatedly washed with absolute alcohol.



A solution of the salt gives a faintly acid reaction to litmus paper.

On analysis, the proportions of C,H,N and Sb present in the salt with the water of crystallization are as follows :—

$$\left\{\begin{array}{l}\text{C} = 15{\cdot}20\%,\ \ \text{H} = 3{\cdot}27\%,\ \ \text{N} = 4{\cdot}65\% \text{ and } \text{Sb} = 33{\cdot}80\% \\ \text{Water of crystallization} = 12{\cdot}25\%\end{array}\right.$$

Calculated for $CO(NH_2)_2 \cdot (C_4H_5 \cdot Sb\,0 \cdot 0_6)_2 \cdot 5\,H_20$ which is assumed to be the chemical formula of the compound obtained :

$$\left\{\begin{array}{l}\text{C} = 15{\cdot}00\%,\ \ \text{H} = 3{\cdot}33\%,\ \ \text{N} = 3{\cdot}88\% \text{ and } \text{Sb} = 33{\cdot}33\% \\ \text{Water of crystallization} = 12{\cdot}50\%\end{array}\right.$$

So far as I am aware, there is no reference to this compound in the literature on compounds of urea and antimony.

This salt is being used by me in the treatment of kala-azar. Its toxicity to lower animals seems to be rather low and experiments are in progress to determine its toxic and curative doses.

The solubility curve of the compound in water is shown in the accompanying chart.

I am indebted to Mr. Parimal Sen, M.Sc., for helping me in the preparation of this compound, and in working out its solubility curve.

23. Preliminary observations on Cocoon-formation by the common Lahore Leech, *Limnatis* (*Pœcilobdella*), *granulosa* (Sav.).[1]

By G. Matthai.

[With plate XVII.]

(Read before the Indian Science Congress at Nagpore, January, 1919.)

Thirty-four specimens of normal adult size were kept under observation from May 23 to June 23. Each specimen

Text-fig. 1.—Specimen No. 15 in pot with newly laid cocoon.

was placed amongst moist lumps of clayey earth in a separate earthen pot which in its turn was set in a bowl of water (text-

[1] I am indebted to the authorities of the Indian Museum, Calcutta, for referring my specimens to this species. After I had made the above observations Dr. Baini Prashad kindly drew my attention to some notes by M. Mohsin Khan on the rearing of leeches in Mawai. Bara Banki District, United Provinces (*Rec. Ind. Mus.*, VII, p. 206, 1912) in which the breeding season is said to commence in April or May just before the beginning of the rains.

fig. 1) thus obviating any risk of dryness. A piece of wide-meshed muslin was tied round the mouth of the pot, and the water in the bowl was renewed every day. The number of cocoons laid by a single leech during the period varied from one to four, viz., one cocoon by ten specimens (Nos. 4, 10, 13, 15, 17, 23, 24, 25, 26, 31), two by ten (Nos. 1, 5, 7, 14, 16, 18, 22, 27, 29, 30), three by two (Nos 8, 12), and four by one specimen (No. 19).

In a previous lot of six specimens kept under observation from May 7, two freshly laid cocoons were found on May 13, another on May 15, two more on May 26—making a total of six cocoons in about 20 days.

In all, forty cocoons were laid by twenty-two specimens, five leeches (Nos. 6, 21, 28, 32, 33) having died without laying cocoons, another (No. 18) after laying two cocoons, whilst six leeches (Nos. 2, 3, 9, 11, 20, 34) did not form cocoons.

The cocoon during its formation appears as a white frothy girdle round the middle of the body (fig. 1). The animal slowly withdraws its head through the girdle by rhythmic contractions of the body. The right and left sides of the anterior region are alternately raised up and every time the body is bent dorsoventrally. The body of the leech behind the region of the cocoon-formation remains considerably contracted during the process. When the head is completely withdrawn an opening is left at the anterior and posterior ends, which soon close up. Cocoon-laying is a comparatively slow process lasting for at least six hours (figs. 2 and 3).

In the freshly laid condition the posterior part of the cocoon (fig. 3) is broader than the anterior and notched in the middle. In a day or two the cocoon hardens, when it assumes an oval shape (fig. 4) measuring 18-20 mm. in length and 11-13 mm. in breadth. The cocoon-wall consists of an inner membranous layer, loosely adherent to which is an outer spongy layer about 2 mm. in thickness enclosing air-bubbles. Each end of the cocoon appears to be closed by a yellowish plug. When placed in water the cocoon floats, but if the spongy outer layer is scraped off it sinks.

On May 25 the water in the pots was not renewed, and as a result much of the water in the pots had evaporated by the following day, the earth in some having become almost dry. On examination on the 26th May, a newly laid cocoon was found in the pots containing leeches Nos. 5, 7, 12, 16, 18, 19, 22, 25, 26, and 29, whilst the leeches Nos. 6, 21, 28, and 32 were found dead, owing perhaps to dryness. The temperature of room on that day was 32°C. whilst that of the moist earth inside the pots was 24°C. Fresh water was then poured into both pots and bowls, and when examined on May 27 no fresh cocoons were found, owing perhaps to the return of favourable conditions such as sufficiency of water, coolness, etc.

On May 30 one freshly laid cocoon was found in each of the pots containing leeches Nos. 1 and 14. The immediate cause of this appears to be the scarcity of moisture since these pots were nearly dry when they were examined. Similarly on June 4, a freshly laid cocoon was found in the pot containing leech No. 15, which when examined was found to be almost dry since no water was poured into the pot or dish on the previous day. On June 6, cocoons were found for the first time in the pots containing leeches Nos. 13, 23, 24, 30 and 31 and a second cocoon in No. 19. The pots containing these leeches were emptied of water on the previous day.

It would appear from these observations that cocoon-laying is induced by tendency to dryness and rise of temperature. *i.e.*, by adverse conditions. This suggestion is supported by the behaviour of the control-specimens. A fresh supply of one dozen leeches was obtained from the same dealer on May 28; of these eleven were kept in a glass jar containing water, the remaining one in an earthen pot (No. 1) with two lumps of moist earth and sufficient water to keep the lumps submerged. The water in both the jar and the pot was renewed every day. On June 5 one of the specimens from the glass jar was put into an earthen pot (No. 2) in water but without any earth inside, the pot being placed in an earthen bowl of water. None of these control specimens lay cocoons. although those in the glass jar were kept alive till the end of August.

The contents of the cocoon form a dark-grey jelly. Development takes place when cocoons are kept on damp earth, but they should not lie immersed in water nor should the cocoons be covered over with mud. Young ones hatch out in about a fortnight through an opening on one end of the cocoon. It is possible that in summer development may be accelerated by the heat. From a cocoon three or four to fourteen young ones hatch out varying in size to a slight extent. They are about 20 mm. long and 3 mm. broad, when extended about 25 mm. long, whitish in colour and swim vigorously in normal salt solution (0·9%) by wriggling movements of the body, attaching themselves to the sides of the vessel by their posterior sucker. These have the general shape of the adult leech but are thinner, the alimentary canal with the lateral pouchs being visible through the more or less transparent skin. In a few days the characteristic colour-pattern appears. Two broods — one of ten, (from the second cocoon of leech No 8) and another of thirteen (from the second cocoon of leech No. 18)—were kept alive in water from June to the end of August. The dark-grey contents of the cocoons are almost completely used up when the young ones are hatched out.

The large size, spongy outer layer and dark-grey contents distinguish the cocoon of the leech from that of the earthworm

LIST OF SPECIMENS KEPT

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
May 23																
24	..	..	..	..	..	..	..	*								
25																
26	..	..	..	..	*	‡	*	..	..	..	..	*	..	..	..	*
27																
28																
29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30	*	..	..	..	..	..	..	..	..	..	..	*[2]	..	*[1]		
31																
June 1	..	..	..	..	..	..	*[2]	*[3]	..	..	..	..	..	..	..	..
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3																
4	..	..	..	..	..	..	..	..	..	*[4]	..	..	..	..	*	
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	..	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..
7	..	..	..	*	..	..	..	*[5]								
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	*[11]											
10																
11	*[12]															
12																
13																
14																
15																
16																
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	*[13]		
19																
20																
21	..	..	..	..	..	..	..	..	..	..	..	*				
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
23																

*=Cocoon found.

On May 25 the pots were not examined nor filled with water .

[1] Cocoon opened on June 20, no embryos visible in contents.

[2] **Cocoon opened on June 20 : 3 dead embryos found.**

[3] Ten young hatched out on June 15, kept alive till Aug. 30.

[4] **Five young hatched out on June 19.**

[5] **Cocoon opened June 21 : 13 young found, 12 with dorsal colour pattern developed ; kept alive till Aug. 30.**

[6] **Cocoon laid on May 26 missing.**

[7] **One more cocoon seen on a later date.**

UNDER OBSERVATION.

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
..	*	*	..	‡	*	..	..	*	*	..	‡	*	..	..	‡		
..	..	..	..	..	..	..	..	..	..	*							
..	..	..	..	..	..	..	..	..	..	*							
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	‡	
..	*5	..	..	..	..	..	..	..	..	..	..	6					
..	..	*	..	..	..	*	*	..	..	..	..	..	*7	*8			
..	..	..	..	..	*10												
..	‡																
..	..	*14															

‡=Leech found dead.

[8] Cocoon opened June 23: 3 young found with dorsal colour pattern well developed.

[9] Cocoon opened June 16: 10 young ready for hatching.

[10] Cocoon opened June 21: 10 young found with dorsal colour pattern developed.

[11] Cocoon opened June 18: 11 young found, of which 10 were fully formed.

[12] Cocoon opened June 17: 3 partially formed embryos found, 3–10 mm. long.

[13] Cocoon opened June 20: 5 white spots visible in contents, perhaps early stages in development.

[14] Two cocoons found.

EXPLANATION OF PLATE XVII.

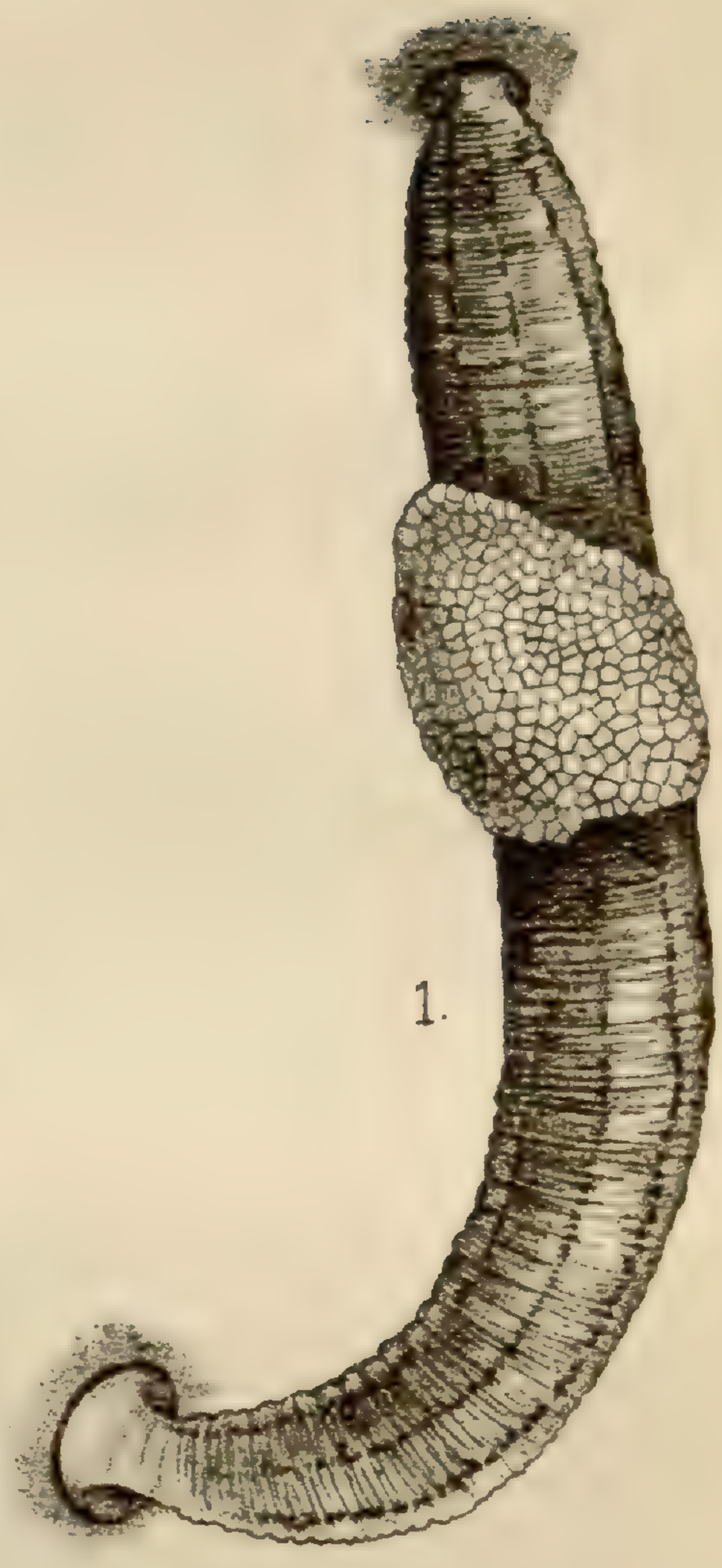
FIG. 1.—2nd cocoon of specimen No. 27 in the process of formation—Nat. Size.

FIG. 2.—3rd cocoon of specimen No. 8 at a later stage of formation than in fig. 2.—Nat. Size.

FIG. 3.—2nd cocoon of specimen No. 8 newly laid—Nat. Size.

FIG. 4.—Hardened cocoon of No. 10.—Nat. Size.

2.



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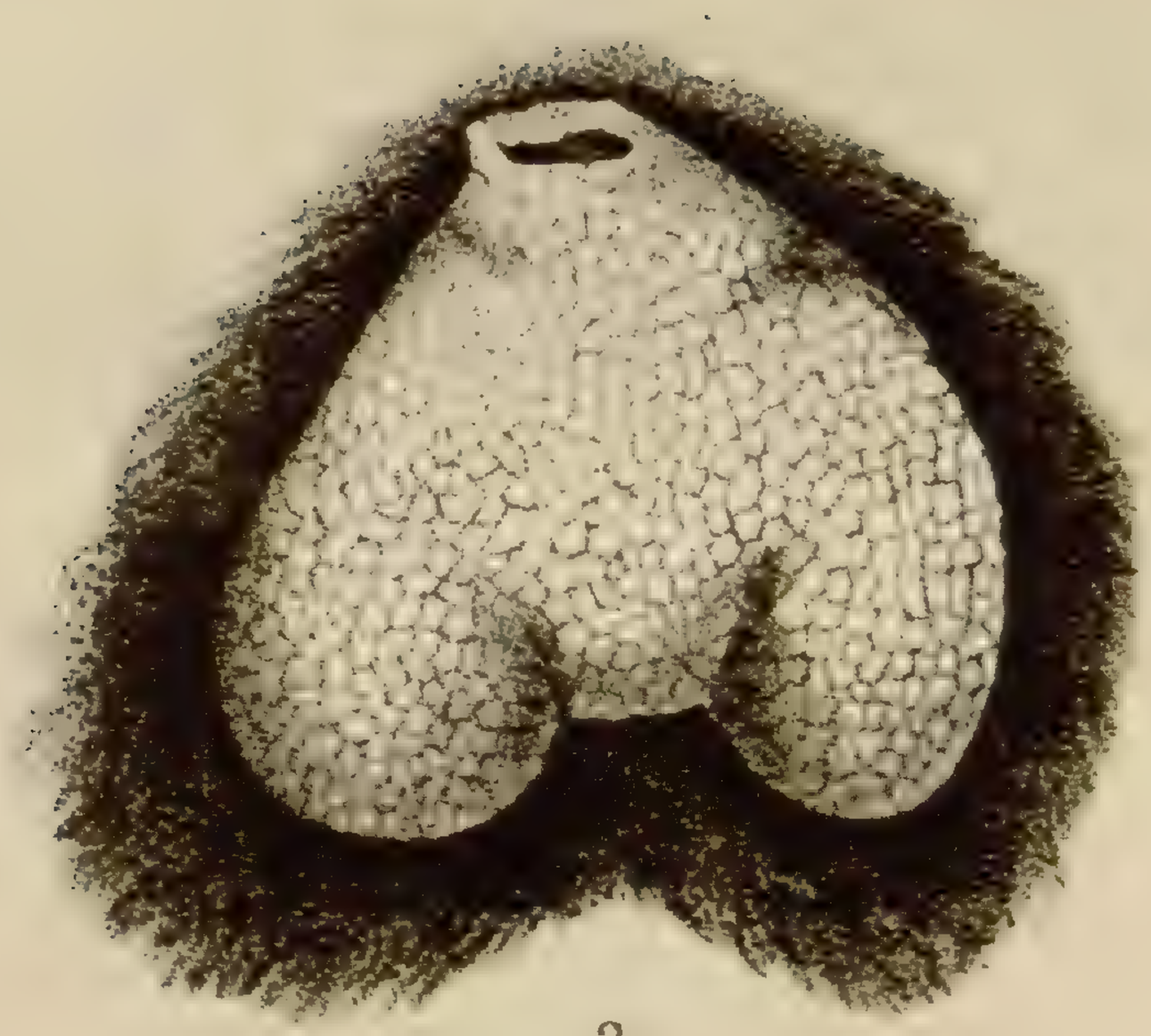


3.

4.

M. L. Bhatia del. A. Chowdhary lith.

Cocoon formation in Limnatis.

24. Records of Agaricaceae from Bengal.

By S. R. Bose, M.A., F.L.S., *Professor of Botany, Carmichael Medical College, Calcutta.*

(With Plate XVIII).

The following Agarics collected in Calcutta and the neighbouring districts were taken by me to Peradeniya Botanical Gardens Herbarium, Ceylon, in March 1919. There I identified them with the kind assistance of Mr. T. Petch, the distinguished Mycologist in charge of the Mycological Herbarium, and compared my specimens with those in the rich collection of tropical fungi. The species mentioned here are for the first time reported from Bengal. Some of the Bengal Agarics have already been recorded in the Proceedings of the Indian Association for Cultivation of Science, Volume IV, Part IV and in the Science Convention of that Association for the year 1918.

Family AGARICACEAE.

Subfamily Leucosporae.

With white spores.

1. **Lentinus connatus**, Berk.

(Plate XVIII, fig. 1).

Distribution and Habitat.—On rotten wood in the Philippine Islands, common on logs at Peradeniya, Ceylon; now reported from the interior of the Howrah district, Bengal, August 1918, growing on dead pieces of wood, usually in clusters.

Pileus.—Stalked, infundibuliform, very thin, smooth, sometimes minutely scaly, white when fresh, turning blackish in course of time, soft, diameter about $7\frac{1}{2}$ cm.

Stalk.—White, turning blackish at the base in course of time; central, minutely tomentose, tolerably rigid, $2\frac{1}{2}$–$7\frac{1}{2}$ cm. long, hollow.

Gills.—Decurrent, very narrow (breadth about $\frac{1}{2}$ mm), crowded, of the same colour as the cap.

Margin.—Finely divided by the endings of the numerous gills.

Spores.—White turning brownish in course of time, oval, $6 \times 4\ \mu$.

Cystidia.—None.

2 **Lentinus subnudus,** Berk. = L. *cretaceous.*

(Plate XVIII, fig. 2).

Distribution and Habitat.—Khandala, Bombay, on fallen trunks at Point De Galle in Ceylon, and near Adelaide, Australia; now reported from all parts of Bengal from June to December, growing on pieces of log in timber yards in clusters usually, on dead branches of trees as well, very common.

Pileus.—Stalked, deeply infundibuliform, colour white when fresh, turning brownish in course of time, upper surface distinctly scaly, brownish scales arranged in regular concentric rings, hence it appears spotted, soft when young, stiffening and drying up, of various sizes, diameter from $2\frac{1}{2}$ to $7\frac{1}{2}$ cm.

Stalk.—White, base usually black, solid, central, of varying lengths about $2\frac{1}{2}$ to 5 cm., in some species thin, in others thick, similarly coated all over with dense scales, sometimes almost smooth, becoming hard in drying up.

Gills.—Decurrent, narrow, in bigger specimens broad, crowded, unicolourous.

Margin.—Involute.

Spores.—White with a brown outline, oval, $6 \times 4\ \mu$.

Cystidia.—None.

3. **Lentinus sajor-caju,** Fr.

(Plate XVIII, fig. 3).

Distribution and Habitat.—Found in the Moluccas and the Nicobars on earth, on a decaying erect tree trunk at Peradeniya, Ceylon; now reported from the interior of Hooghly district, Bengal, in September 1918, not common, growing on dead pieces of wood.

Pileus.—with short stalks, irregular, slightly infundubliform, depressed at the centre, gray, turning yellowish in course of time, surface generally smooth, soft, thin, diameter about 10 cm.

Stalk.—Short and rigid, about 1 cm. long, thick, solid, excentric, of the same colour as the cap, base blackish, with remnants of a broad ring, making the stem somewhat scaly.

Gills.—Decurrent, narrow, crowded, at first white, then grayish-yellow, on their faces a number of globose, short processes.

Margin.—Delicately wavy with short concavities and convexities.

Spores.—Oval, white turning pale-brown in course of time, $6 \times 4\ \mu$.

Cystidia.—None.

4. **Collybia albuminosa** (Berk), Petch.

(Plate XVIII, fig. 4).

Distribution and Habitat.—Found on termite nests at Peradeniya, Ceylon; now for the first time reported from the interior of Jessore district in July 1918 and from Hooghly district in July 1920, growing directly and suddenly from damp ground in rainy season. Edible variety, eaten by villagers, called by local people "Patal Konr."

Pileus.—With a long stalk, in the shape of open umbrella, with a viscid cuticle and distinct umbo at the centre, grayish-white, surface soft and smooth, diameter about 5 cm.

Stalk.—Of the same colour as the cap, hollow, central, smooth, base broader, apex tapering, not very delicate, about 12½ cm. long.

Gills.—Free, crowded, narrow, gray coloured, basal ends of gills obtuse.

Margin.—Almost entire.

Spores,—Oval, pink, 9 × 6 μ, some almost hyaline, oval, 8 × 5 μ.

Cystidia.—Present.

5 **Pleurotus flabellatus,** B. and Br.

(Plate XVIII, figs. 5 and 5*a*).

Distribution and Habitat.—Found on dead wood at Peradeniya, Ceylon, Venezuela, Central America, and South Africa; now reported from Hooghly district, Bengal, in rainy season in July and August, growing several together in an imbricate manner, on dead branches of trees, on dead logs, some arising directly from the ground. Having no stalks or very short ones, they seem to originate direct from the stem.

Pileus.—Almost dimidiate, in the form of an arc, about 2½ to 5 cm. across, some even bigger, upper surface quite smooth, very delicate, dead white, some being a little grayish, plants dissolving into a slimy mass and soon disappearing.

Stalk.—Either absent or a very short lateral one, with a black base which is tougher than the cap.

Gills.—Narrow, crowded, of the same colour as the cap, looking much crumpled.

Margin.—Entire.

Spores.—White, oval, 6 × 4–5 μ, some round, diameter 5 μ.

Cystidia.—None.

6. **Lepiota cepaestipes,** Sow.

For figure see Cooke t. 5.

Distribution and Habitat.—Found in Brazil, Italy, and different parts of Europe; now for the first time reported from Jessore in June 1918, and from Calcutta in August 1919, growing in clusters usually on logs (rotten rafters in room). My specimens are identical with the British species described in Massee's book.

Pileus.—Stalked, conical at first, soon becoming campanulate and umbonate, distinctly sulphur-yellow, upper surface covered with delicate separating minute yellow scales, substance very soft and delicate, flesh thin somewhat membranous, diameter nearly 5 cm. in expanded form.

Stalk.—Base bulbous, tapering upwards, of the same colour (sulphur-yellow), covered with minute yellow powdery scales which can be rubbed off, central, hollow, delicate, length 7½ to 10 cm., ring on the upper part of the stalk free, yellow and fugacious.

Gills.—Free, pale-yellow, narrow, crowded, basal end acute.

Margin.—Membranous, or semi-transparent as Massee calls it.

Spores.—White, oval, 10–12 × 7–8 μ, some round, diameter 7 μ.

Cystidia.—None.

N.B.—Beautiful yellow plants, the minute scales on the pileus are the remains of the delicate universal veil.

Subfamily—Rhodosporae.

With pink spores.

7. **Volvaria diplasia,** B. and Br.

(Plate XVII, fig. 7).

Distribution and Habitat.—Found on dead wood and specially on ground among dried roots at Peradeniya, Ceylon; now reported from the interior of Hoogly district, Bengal, in June, July, August and sometimes in September, 1919 and 1920, growing amongst heaps of rotten straw. This is edible, eaten by the villagers.

Pileus.—Stalked, conico-campanulate, dark-gray, shining, covered with fine elongated silky hairs, which can be rubbed off; flesh thick, soft and white, diameter 7½ to 10 cm.

Stalk.—About 10 cm. long, tapering towards the apex, solid, central, white, not very delicate, base thick and rounded, with a volva.

Gills.—White, readily changing into pink colour, free. broad, and crowded, ends round.

Volva.—Thin and papery, very loose, usually splitting into three or four parts and hanging down at the base, internally whitish, externally smooth with numerous small black dots.

Spores.—Elliptic, pinkish, 7–8 × 4 μ. some round, diameter 5 μ.

Cystidia.—None.

This species differs from *Volvaria terastia* in its thin papery volva, in other respects it closely resembles *V. terastia.*

Subfamily—Ochrosporae.

With ochraceous spores.

8. **Flammula dilepis,** B. and Br.

(Plate XVIII, figs. 8 and 8*a*.).

Distribution and Habitat.—Found on dead wood at Peradeniya, Ceylon ; now reported from Khulna, Hoogly, Calcutta, from June to September, growing profusely in cavities of dead trunks of palms and dead stumps of bamboos and other big trees, very common.

Pileus.—Stalked, more or less circular, upper surface brownish-yellow, all over coated with minute black scales, soft, of varying forms, diameter of bigger ones about 5–7½ cm., smaller ones about 1–2½ cm.

Stalk.—Dark-brown, almost naked, hollow, central, tolerably rigid, of varying lengths from 1–5 cm.

Gills.— Adnate, broad, crowded, colour deeper brown than on the upper surface, with acute basal ends, in older ones two side walls of gills much torn and divided.

Margin.—In older ones revolute.

Spores.—Reddish-yellow, surface minutely warted, elliptic, 6 × 4 μ, few round diameter 4 μ.

Cystidia.—Few, present.

9. **Galera zeylanica,** Petch.

(Plate XVIII, figs. 9 and 9*a*.).

Distribution and Habitat.—Found on ground at Peradeniya,, Ceylon; now reported from Hooghly, Bengal, in September. 1918, growing on ground amongst grass.

Pileus.—With long stalk, distinctly umbrella-shaped, conico-convex, red-brown at the centre, dirty-brown towards the margin, surface smooth, very thin and delicate, diameter 1–3½ cm.

Stalk.—White, hollow, broader at the base, tapering at the apex, usually smooth, delicate, central, about 11 cm. long.

Gills.—Pale-brown, somewhat broad. crowded, adnate, with acute basal ends.

Margin.—Striate.

Spores.—Oval, yellow-brown, 10 × 6–7 μ, some brown, round, diameter 6 μ.

Cystidia.—None.

Subfamily—MELANOSPORAE.

With black spores.

10. **Panæolus cyanascens,** B. and Br.

(Plate XVIII, fig. 10.).

Distribution and Habitat.—Found on dung at Peradeniya, Ceylon; now reported from Belgachia, Calcutta, in August 1919, growing on cow-dung, horse-dung, etc.

Pileus.—Stalked, umbrella shaped, diameter about 3½ cm., colour ashy-white, the umbo at the centre reddish-yellow smooth, soft.

Stalk.—White, turns deep blue when lightly bruised central, smooth, covered with shining particles, tolerably rigid, about 6–10 cm. long, hollow.

Gills.—Adnate, rather broad and crowded, black-coloured with bluish tinge, with accuminate basal ends.

Margin.—Entire with a bluish tinge.

Any part of the plant when bruised, turns deep blue.

Spores.—Black, oval, apiculate at both ends, 10–13 × 7–8 μ, some round, blackish, diameter 10 μ.

Cystidia.—Very prominent, with white tops at surface.

11. **Coprinus fimbriatus,** B. and Br.

(Plate XVIII, fig. 11.).

Distribution and Habitat.—Found on dung at Peradeniya, Ceylon; now reported from Howrah and Hooghly districts in August 1918, growing on dung usually.

Pileus.—Stalked, umbrella-shaped with a circular margin, upper surface smooth, grayish-black with a white umbo, delicate, diameter about 1 cm., pileus becoming divided along the length of the gills.

Stalk.—Rooting at the base, white, hollow, central, very delicate, usually smooth, about 4 cm. long.

Gills.—Adnate, broad, crowded, black.

Margin.—White and much divided, hence called *fimbriatus.*

Spores.—Black and oval, 9–10 × 6 μ, some round, diameter 6 μ.

Cystidia.—None.

12. **Panæolus campanulatus,** Cooke.

For figure see Cooke, t. 629.

My specimens agree with the British species described in Massee's book.

Distribution and Habitat —Found on earth, on dung, frequently in Europe, on earth at Peradeniya, Ceylon, on manured lands at Cincinnati, United States and in South Africa, on earth at Rochefort, Saintes, Pessines (France); now reported from the interior of Hooghly district, Bengal, in August 1918, growing on dung and manured places.

Pileus.—Stalked, somewhat campanulate, fleshy, smooth, brownish-black, diameter about $2\frac{1}{2}$ cm.

Stalk.—Rooting at the base, central, straight, brownish with very minute black dots, tolerably rigid, about 6 cm. long, hollow.

Gills.—Adnate, ascending, crowded, black, narrow.

Margin.—Entire.

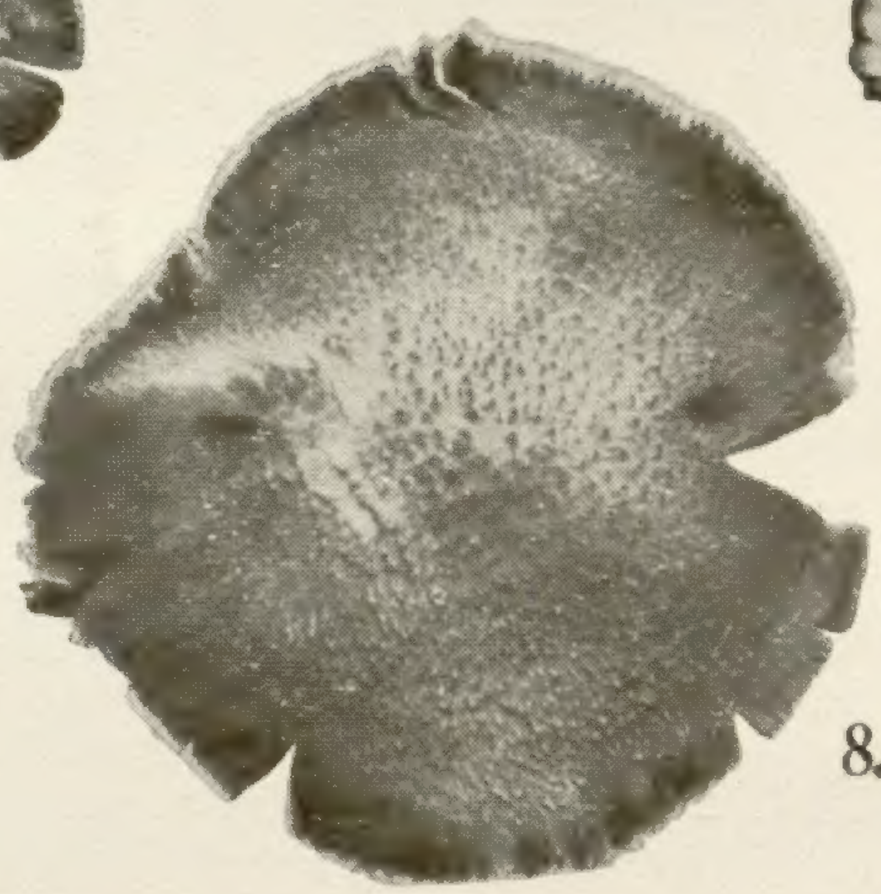
Spores.—Deep brown, oval, with a thick wall, $10 \times 6\ \mu$, some round, diameter 8 μ.

Cystidia.—None.

EXPLANATION OF THE PLATE NO. XVIII

FIG. 1.—*Lentinus connatus*, Berk
FIG. 2.—*Lentinus subnudus*, Berk.
FIG. 3.—*Lentinus sajor-caju*, Fr.
FIG. 4.—*Collybia albuminosa* (Berk), Petch.
FIG. 5.—*Pleurotus flabellàtus*, B. & Br. Upper surface.
FIG. 5*a*.—*Pleurotus flabellatus*, B. & Br. Hymenial surface.
FIG. 7.—*Volvaria diplasia*, B. & Br.
FIG. 8.—*Flammula dilepis*, B. & Br. Upper surface.
FIG. 8*a*.—*Flammula dilepis* B. & Br. Hymenial surface.
FIG. 9.—*Galera zeylanica*, Petch. Upper surface.
FIG. 9*a*.—*Galera zeylanica*, Petch. Hymenial surface.
FIG. 10.—*Panœolus cyanascens*, B. & Br.
FIG. 11.—*Coprinus fimbriatus*, B. & Br.

1.



8.

2.

4.

8a.

9a.

11.

3.

9.

7.

5a.

5.

10.

Agaricaceae from Bengal.